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PRINCIPLES

COMMON FORMS: C. E. Shantz
Part

A HIGHER SCALE OF MENTAL MEASUREMENT AND ITS APPLICATION TO CASES OF INSANITY

By

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One of the great needs of practical psychiatry is that of standardized methods of mental measurement. For some such methods a debt of gratitude is already due to psychologists; but our experience in their application has gradually led us to realize that the standards which have been developed and made available do not take sufficiently into account environmental influences. It has been too readily assumed at times that a difference in the showing of two subjects is necessarily to be attributed to a difference in native mental capacity.

It will be granted, of course, that to provide a satisfactory correction of the error due to the variable influence of environment would be a difficult matter; but it has occurred to us that the difficulty might be materially reduced by confining our proposed tests to a selected sphere of knowledge or activity in relation to a corresponding and more or less readily measurable *sample* of the environment, so to speak, rather than to the environment as a whole.

To take a concrete example, we could, perhaps, form a more useful practical judgment of the aptitudes of a printer's apprentice by considering the speed and accuracy with which he can set up a page of text in relation to the length of his apprenticeship, than we could by applying a series of tests of general intelligence and then attempting to correct the results by somehow taking into account the sum total of his general environmental influences.

Assuming that this is so, then in order to develop a generally

applicable method it is necessary, before all, to choose a more or less readily measurable "sample" of environment which would affect at least a majority of possible subjects. We say choose, but the fact is there is hardly any choice in the matter, for only one general environmental element has been in any degree standardized and is at least roughly measurable, namely, the element of systematic education. In spite of some variation of standards in different parts of the country, everyone recognizes a certain degree of general uniformity in magnitudes represented, say, by "four elementary school years," "eight elementary school years," "high school education" or "collegiate education."

In speaking of systematic education as a measurable environmental element, in this connection, we do not mean such vague, though important, parts of it as scholastic atmosphere, refining influences, stimulating associations; these parts, being variable and hardly measurable, must not be allowed to affect the results; we mean only the process of the actual imparting of knowledge, and preferably that knowledge which is more or less basic or theoretical, and not with which one is apt to come in touch in extra-scholastic life.

Having these considerations in mind, our special problem became to develop a simple method whereby a subject's mental capacity might be estimated from a measure of what he has acquired in the course of his education, and from a comparison of his acquisition with the average of a group of subjects of the same amount of education.

Our experience with free association tests¹ has led us to believe that just such a test, applied by means of a specially selected list of stimulus words, would best serve our purpose, owing particularly to the great simplicity of the procedure and to the readiness with which the results may be classified and standardized.

This presentation has been arranged in six parts: I. The

¹ Kent and Rosanoff. *A Study of Association in Insanity*. Amer. Journ. of Insanity, July and Oct., 1910.—Eastman and Rosanoff. *Association in Feeble-Minded and Delinquent Children*. Amer. Journ. of Insanity, July, 1912.—Isabel R. and A. J. Rosanoff. *A Study of Association in Children*. Psychol. Review, Jan., 1913.

Basic Standards; II. Norms Representing Various Degrees of Education; III. Certain Selective Influences and Effects of Selection; IV. Measurements Made in Cases of Insanity; V. Evaluation of the Method. Suggestion for Better Standardization; and VI. Summary.

PART I. THE BASIC STANDARDS

In selecting the stimulus words we were guided, in the first place, by the usual curricula of schools, comprising the subjects of arithmetic, grammar, geography, history; algebra, geometry, physiology, literature, civics; trigonometry, physics, chemistry, and biology;—and we were further guided by the aim of revealing in each instance the presence or absence of a familiarity with the school subjects concerned, yet such a familiarity which is not likely to be acquired otherwise than in the course of systematic education. The following list of words was finally selected:

1. geography	26. osmosis	51. binomial	76. continent
2. participle	27. percentage	52. crustacean	77. spore
3. Waterloo	28. cerebellum	53. Bonaparte	78. theorem
4. refraction	29. fractions	54. meridian	79. Himalaya
5. arithmetic	30. titration	55. chlorophyll	80. Renaissance
6. botany	31. carbohydrate	56. tetrahedron	81. quotient
7. isomerism	32. duodenum	57. Madagascar	82. oxidation
8. Portugal	33. cosecant	58. corolla	83. haemoglobin
9. amoeba	34. biology	59. ventral	84. axiom
10. declension	35. Odyssey	60. Belgium	85. Amazon
11. burette	36. vertebrate	61. tangent	86. isosceles
12. physics	37. gravimetric	62. dorsal	87. cohesion
13. hyperbole	38. federal	63. colloid	88. protoplasm
14. retina	39. morphology	64. equator	89. centrifugal
15. coagulation	40. hypotheneuse	65. judiciary	90. molecule
16. Cervantes	41. Magellan	66. synthesis	91. cotyledon
17. franchise	42. hexameter	67. Athens	92. abscissa
18. subtraction	43. meteor	68. epithelium	93. gravitation
19. metabolism	44. momentum	69. feudalism	94. galvanic
20. predicate	45. Cornwallis	70. coefficient	95. logarithm
21. mollusc	46. protozoon	71. perennial	96. calyx
22. inquisition	47. syntax	72. plebeian	97. polarization
23. amphibious	48. distillation	73. catalytic	98. cephalic
24. decimal	49. pollen	74. embryo	99. proteid
25. hydraulic	50. peninsula	75. spectrum	100. kinetic

The first part of our undertaking consisted in making tests on a large number of selected subjects, the records of which were to serve for the construction of basic standards.

In the work of collecting material, we adhered to the following instructions, and we furnished the same to our collaborators.

“The test must be given to subjects individually and not in groups.

"It should be conducted in a quiet place reasonably free from distracting influences.

"The stimulus words are read off in the order in which they are given on the printed form, care being taken to pronounce them correctly, distinctly, and in a sufficiently loud tone of voice. At the subject's request, any stimulus word may be repeated, but its meaning must not be explained or discussed. It may also be spelled at the subject's request if necessary in order to make sure that the word has been correctly conveyed to him.

"The subject must be given unrestricted time to formulate a reaction after a stimulus word has been given, but he must be instructed to give the first word that comes to his mind and not to attempt to choose a most appropriate response. The reaction time is not recorded.

"The subject must be instructed to react each time with one word and not with a sentence or a compound word; he must not react by merely repeating the stimulus word or by giving a different grammatical form of it.

"The subject may say that he is not familiar with a given stimulus word or that he is for some other reason unable to react. The experimenter may then proceed with the next stimulus word after telling the subject that he would come back to the unreacted word later on.

"The subject, in spite of instructions, may react in an unacceptable way, as by giving a sentence or a compound word instead of a single word, or by repeating the stimulus word, or by giving a different grammatical form of it. In such a case the reaction is not put down, but the pertinent instructions are repeated and the next stimulus word is given.

"When all the stimulus words have been given the experimenter must give again those stimulus words to which no responses have been obtained or no acceptable responses. Usually even after thus going over the list a second time there will remain a greater or lesser number of instances of failure of reaction."

In scoring the results of the test we have followed the Kent-Rosanoff method of separating reactions into *common* and *in-*

dividual, without making use of the criteria for more detailed classification which seemed unimportant for our present purposes. On the other hand, it became apparent early in the course of our work that a means of as accurate evaluation as possible of each common reaction was of greater importance here than in the scope of application of the Kent-Rosanoff test.

Theoretically, it may perhaps be assumed that a reaction is of biological value according to the *faithfulness* and *comprehensiveness* with which it represents the actual relationships in nature of the things represented by the stimulus word. Practically, our material reveals these relationships only in so far as they are mirrored in the minds of our subjects.

It would seem, *a priori*, that the frequency with which a reaction to a given stimulus word occurs in a series of test records selected at random should be a more or less accurate measure of the element of faithfulness, for chance is obviously against the repeated presentation by different subjects of any one falsely perceived or imagined relationship.

It would seem also that the element of comprehensiveness, too, should be to some extent measurable by frequency, for undoubtedly the more numerous the points of relationship are between a given pair of stimulus and reaction words and the things represented by them, the more often will these points of relationship determine the production of that particular reaction.

But in this connection another factor appears for consideration, namely, the special experience equipment of the group of subjects from whom the material for the frequency tables is obtained. Our experience with the Kent-Rosanoff test, in which commonplace words in daily use serve as stimulus, did not show this factor to be of any great importance; but the case is different with the present test, as is shown by the contrast in the reactions of two selected groups of subjects to the stimulus words *participle*, *refraction*, and *amoeba*, given in Table I. The first group is that of our one hundred highest qualified subjects; fifty-three of them are "starred" in Cattell's "American Men of Science," and the remaining forty-seven, though not "starred,"

are also listed there and in addition occupy professorships in scientific departments of higher institutions of learning. The second group is one also of one hundred subjects, but selected at random and having not more than a high school education,—in most cases much less. Attention is called to differences in reactions not only as to kind but also as to group values.

TABLE I.

PARTICIPLE	Group 1 values.	Group 2 values.	REFRACTION	Group 1 values.	Group 2 values.	AMOEBA	Group 1 values.	Group 2 values.
	Group 1 values.	Group 2 values.		Group 1 values.	Group 2 values.		Group 1 values.	Group 2 values.
verb	28	1	light	35	5	animal	12	2
grammar	17	18	reflection	11	1	protozoa	11	0
noun	15	0	glass	10	0	paramoecium	7	0
past	4	0	index	5	0	protoplasm	7	0
infinitive	3	0	eye	4	0	biology	4	0
adjective	2	0	lens	3	0	jelly	4	0
being	2	0	physics	3	0	proteus	4	0
preposition	2	0	bending	2	0	protozoon	4	1
speech	2	2	diffraction	2	0	zoology	4	0
participate	1	12	eyes	2	0	cell	3	1
part	1	11	microscope	2	0	microscope	3	0
partake	0	3	refractory	0	6	animalcule	2	0
word	0	3	refract	0	5	bacteria	2	0
English	1	2	fraction	0	4	bug	2	0
grain	0	2	reaction	0	4	unicellular	2	0
think	0	2	fractions	0	3	water	2	0
			part	0	3	city	0	3
			arithmetic	0	2	medical	0	3
			break	0	2	name	0	3
			decimal	0	2	place	0	2
			deviation	0	2			
			from	0	2			
			numbers	0	2			
			reflex	0	2			
			retract	0	2			
No reaction	0	18	No reaction	0	20	No reaction	1	57

The table contains only the reactions which have for either group of subjects a value of not less than two per cent. Even more striking differences are indicated in the kind of individual reactions given by the two groups. The subjects of Group 1 gave the following individual reactions to the stimulus word *refraction*: high, ice, minerals, myopia, polariscope, repulsion, Snellen, and transparent; while the subjects of Group 2 gave the following: adding, again, bad, biceps, change, consider, decimals,

difference, drawing, example, fracture, friction, knowledge, noisy, parts, rebreak, recoil, reduce, refrain, return, shadow, small, sound, sum, summing, test, and traction.

Aside from the obvious difference in the quality of the individual reactions given by the two groups of subjects, the fact of the far greater number of them given by the second group,—twenty-seven as compared with but eight for the first group,—is of significance, especially in view of the circumstance that there were no instances of failure of reaction in the first group and no less than twenty in the second.

We are thus led to conclude that the values of reactions would be erroneously indicated by frequency tables constructed on the basis of material obtained from subjects selected at random; but a special selection of subjects according to education and scientific attainment would seem to make possible the construction of basic standards sufficiently accurate to serve for practical purposes.

It would seem from this that the nearest approach to a perfect standard should be attainable by securing test records from a large number of "starred men" (including women, of course). The obstacles encountered in the work of gathering such material proved, however, greater than we had anticipated, so that in the end we found ourselves in possession of but fifty-three utilizable "starred" men's test records.² As our plan was to construct the basic standards, like those of the Kent-Rosanoff test, with test records from one thousand subjects, we had to use for the most part test records from subjects without the qualifications of "starred" men: persons listed in Cattell's "American Men of Science" but not "starred;" a good many, not listed, but holding professorships or instructorships in higher institutions of learning; persons holding a doctor's or master's degree; and others having at least a full collegiate education.

Having constructed frequency tables with the one thousand test records obtained from thus variously qualified subjects, we

² A small number of not utilizable test records have been obtained from both, "starred" men and other subjects; we shall have again occasion to refer to these.

found that many of the values indicated were obviously erroneous and some perhaps even fictitious; the following instances have been selected as the more striking among the reactions with an indicated frequency value of not less than 1.0 per cent: *isomerism*—geography (1.2), *isotherm* (1.5), *lines* (1.0), *sleep* (1.4); *amoeba*—botany (1.2); *burette*—barette (4.3), French (1.8), hair (2.3); *Cervantes*—man (2.3); *metabolism*—psychology (1.1); *amphibious*—ambidextrous (1.0); *osmosis*—bones (1.3); *titration*—titanic (1.5); *gravimetric*—metric (1.0); *morphology*—death (4.8), *sleep* (2.0); *Magellan*—man (1.0); *hexameter*—perimeter (1.6); *protozoon*—geology (2.0); *crustacean*—earth (4.7); *chlorophyll*—medicine (1.3); *ventral*—left (1.1), wind (2.3); *colloid*—celluloid (6.6), collar (2.9); *synthesis*—antithesis (2.8); *catalytic*—catalepsy (1.0), cataleptic (4.3), catastrophe (1.0), fit (2.4), fits (1.3); *spore*—sporadic (1.1), sport (1.0); *cotyledon*—cottonene (1.3); *polarization*—flower (1.0); *cephalic*—disease (1.0), syphilis (1.0). Erroneous or fictitious values of less than 1.0 per cent. are, of course, even more frequently to be found.

The accuracy of the indicated values is further impaired in the cases of many of the stimulus words by the many failures of reaction; thus for the following stimulus words the failure frequency exceeded 5.0 per cent: *isomerism* (21.4); *burette* (15.4), *Cervantes* (6.5), *metabolism* (5.7), *osmosis* (5.8), *titration* (25.4), *duodenum* (7.2), *gravimetric* (5.3), *corolla* (7.5), *colloid* (14.1), *epithelium* (8.4), *catalytic* (11.1), *haemoglobin* (7.1), *cotyledon* (13.9), *abscissa* (10.7), *cephalic* (14.2).

These circumstances led us to select from amongst our test records one hundred, which had been obtained from our most highly qualified subjects, for the construction of a "high standard" which should serve for a more accurate evaluation of reactions. This group of subjects consisted, as already stated, of fifty-three "starred men" and forty-seven others, also listed in Cattell's "American Men of Science," but not "starred," and holding professorships in scientific departments of higher institutions of learning. The high standard values are given in paren-

theses in the frequency tables. In comparing the high with the general standard values it is to be borne in mind that the former represent frequencies on the basis of 100, and the latter on the basis of 1000.

That more accurate evaluations are represented by the high than by the general standard may be judged from a mere inspection of the frequency tables; for instance, all the reactions enumerated above as possessing obviously erroneous or fictitious general standard values of not less than 1.0 per cent. are without a high standard value. Moreover, we have scored many test records by means of both, the high and general standards, and comparisons of the results have readily convinced us that the high standard values are more trustworthy, as they do not fail to reveal more fully the contrasts between groups of subjects distinguished according to educational and intellectual qualifications.

The introduction of the high standard establishes a new group of common reactions,—those without a high standard value; that some of these are actually without apparent value or with but insignificant value we have already shown; but such is by no means the case with all of them; on the contrary, it seems quite certain that had we a greater number of test records from subjects such as those of our most highly qualified group for the construction of our high standard, many reactions now without a high standard value would have been assigned one. The following reactions with a general standard value of not less than 1.0 per cent. but without high standard value may be mentioned as instances in point: *geography*—America (1.5); *participle*—word (2.9); *Waterloo*—defeat (1.3), war (1.0); *refraction*—glasses (1.0), optics (1.0), rays (1.0); *arithmetic*—fractions (2.0), problems (1.0), school (2.5); *botany*—leaves (1.1); *amoeba*—dysentery (1.0), life (1.6); *declension*—word (1.2); *physics*—sound (1.5); *hyperbole*—simile (1.6); *coagulation*—clotting (1.5); *Cervantes*—author (1.7); *metabolism*—assimilation (1.0), blood (1.9), medicine (1.2); *inquisition*—France (1.5); *decimal*—numbers (1.5); *hydraulic*—mining (1.1); *osmosis*—dialysis (1.2), egg (2.8), physiology (1.8), plant (1.2); *percentage*—fractions (1.9), hundredths (1.3), proportion (1.0); *cere-*

bellum—physiology (1.4); *fractions*—half (1.6), percentage (1.8), school (1.4); *titration*—acid (1.3); *carbohydrate*—fats (1.8), physiology (1.2), proteid (2.0); *vertebrate*—physiology (1.2); *gravimetric*—measuring (1.0); *federal*—army (1.0), histology (1.4); *hypotenuse*—square (1.3); *Magellan*—circumnavigation (1.3), sea (1.0); *hexameter*—iambic (1.1); *meteor*—falling (1.4), flash (1.1), planet (1.4); *momentum*—power (1.5), train (2.0); *Cornwallis*—defeat (1.1), soldier (1.1); *protozoon*—water (1.1); *syntax*—construction (1.9), English (1.9), Latin (1.2); *distillation*—spirits (1.1); *pollen*—bees (1.6), yellow (1.8); *chlorophyll*—biology (1.2), coloring (1.2); *Madagascar*—land (1.0); *corolla*—petals (1.7); *ventral*—physiology (3.0); *dorsal*—physiology (1.9), spine (1.2); *colloid*—chemical (1.3), physiology (1.1); *Equator*—map (1.1), south (1.4); *synthesis*—logic (1.2); *Athens*—Greek (2.3); *epithelium*—lining (1.0), surface (1.2); *feudalism*—barbarism (1.0), France (1.5), mediaevalism (1.2); *coefficient*—factor (1.4); *perennial*—botany (1.3), years (1.3); *plebeian*—history (1.1), Roman (1.5); *embryo*—chicken (1.3), growth (1.1), seed (2.1); *spore*—bacteriology (1.0), biology (4.7), egg (2.0), fish (1.6), mould (1.1), zoology (1.8); *Himalaya*—height (1.3); *Renaissance*—literature (3.8), mediaeval (1.6); *quotient*—remainder (1.1); *oxidation*—burn (1.2), silver (1.7); *haemoglobin*—medicine (1.0); *axiom*—corollary (1.4), law (1.2); *isosceles*—equilateral (1.1); *protoplasm*—botany (1.0), germ (1.3), matter (1.6), physiology (1.2), zoology (2.1); *centrifugal*—center (3.6), circle (1.2); *molecule*—atoms (1.3), little (1.2); *galvanic*—iron (3.6), physics (2.8); *cephalic*—skull (1.2); *proteid*—fat (2.4); *kinetic*—power (2.7).

These examples show that the high standard is also lacking in accuracy owing to insufficiency in the amount of material which has been used for its construction, but that to some extent at least any resulting error can be counterbalanced by taking into consideration, in scoring test records, the number of common reactions without a high standard value.

Turning to the many individual reactions found in our material, we find that a very considerable proportion among them

also are apparently of value and would probably have found places in the frequency tables if we had had more adequate material for their construction. In order to provide at least a partial correction of error in the evaluation of individual reactions we prepared an appendix to the frequency tables like the one prepared for use in connection with the Kent-Rosanoff test.

We are thus enabled by means of the frequency tables and the appendix to distinguish the following categories of reactions:

1. Common with high standard value.
2. Common without high standard value.
3. Doubtful, i.e., to be found in the frequency tables but in a different grammatical form.
4. Individual with value assigned by appendix.
5. Individual without value assigned by appendix.

In scoring test records we have found the following measurements to be of the greatest significance in general: (a) Sum of high standard values; (b) Total number of common reactions; (c) Individuality index; (d) Failure index.

The individuality index and the failure index are calculated for each test record in preference to merely noting the number of individual reactions and of failures of reaction for the reason that the significance of an individual reaction or of a failure of reaction apparently varies according to the stimulus word: the stimulus word *isosceles* evoked 36, and *metabolism* 169, individual reactions from the one thousand subjects whose test records were used for the construction of the frequency tables; similarly, there were no failures of reaction to a number of the stimulus words, such as *Waterloo*, *botany*, *subtraction*, etc., and no less than 254 to the word *titration*; the frequency tables show various degrees of transition between these extremes. Accordingly, our calculations of individuality index and failure index are intended to make allowance for this variable tendency of the stimulus words to evoke an individual reaction or a failure of reaction; it seems obvious that the significance of an individual reaction given in response to the word *metabolism* cannot be the same as that of one given in response to the word *isosceles*, also that the

significance of failing to react to the word *titration* is not so great as that of failing to react to such a word as *subtraction*.

In connection with the frequency table for each stimulus word is given the *individuality frequency* and the *failure frequency* for that word.

In calculating the individuality index for a given test record we obtain first the average individuality frequency by dividing the sum of the individuality frequencies of all the stimulus words, in response to which the record shows individual reactions, by the total number of individual reactions; the individuality index is then obtained by dividing the total number of individual reactions by the average individuality frequency; we have found it sufficient to carry the calculations to the third decimal place. The formula for the calculation is quite simple:

$$\text{Individuality index} = \frac{n^2}{f}$$

n representing the total number of individual reactions and f the sum of all individuality frequencies.

The failure index is calculated in a similar way:

$$\text{Failure index} = \frac{n_1^2}{f_1}$$

excepting that in this formula n_1 represents the total number of failures of reaction and f_1 the sum of all failure frequencies.

Perhaps another element of inaccuracy in our frequency tables should be mentioned before closing this part of our presentation. It is often incredibly difficult, and in some cases apparently impossible, to limit subjects to one word responses; and it has seemed to us that some of our collaborators have not emphasized this point sufficiently in their instructions to subjects; moreover some of the stimulus words have a greater tendency than others to evoke a two word or a compound word reaction. Test records containing more than five such reactions have been regularly discarded by us, as, it seems hardly necessary to say, it would be impossible to construct standards with reactions not limited to one word. We were, however, compelled in the interest of economy of time and labor to accept some test records containing

not over five two word reactions, and some others containing even more but belonging to a special group of reactions which we eventually decided to accept: *geography*—North America (0.6), South America (0.4), United States (1.2); *amoeba*—jelly-fish (0.9); *burette*—cubic-centimeter (0.4), test tube (0.7); *physics*—high school (0.4); *retina*—eye ball (0.4); *Cervantes*—Don Quixote (31.0), Sancho Panza (0.3), wind mill (0.4), wind mills (0.7); *franchise*—street car (2.0), street cars (0.3), woman suffrage (0.3); *subtraction*—minus sign (0.5), taking away (0.4); *mollusc*—shell fish (3.7); *inquisition*—Catholic Church (0.4), middle ages (0.3); *amphibious*—land and water (0.4); *percentage*—one hundred (1.2), per cent (0.5), per cent sign (1.0); *fractions*—one-half (0.4), one-quarter (0.2), one-third (0.1), three-fourths (0.6), three-quarters (0.1), two-thirds (0.4); *vertebrate*—spinal column (0.4); *gravimetric*—metric system (0.8); *federal*—United States (4.1); *hypotenuse*—right angle (1.5); *Magellan*—South America (2.3); *meteor*—falling star (0.3), shooting star (0.5); *pollen*—hay fever (0.5); *peninsula*—Cape Cod (0.6); *crustacean*—shell fish (2.0); *Bonaparte*—Saint Helena (1.3); *tetrahedron*—four-sided (0.7), solid geometry (0.6); *Equator*—Mark Twain (0.4), North Pole (0.4), South America (1.3); *judiciary*—Supreme Court (0.6); *synthesis*—building up (0.4), putting together (1.4), put together (0.3); *feudalism*—middle ages (4.6); *plebeian*—hoi polloi (0.4); *continent*—North America (4.5), South America (0.4), United States (0.3); *Himalaya*—Mount Everest (0.6); *Renaissance*—middle ages (1.4), new birth (0.4); *axiom*—self evident (1.6); *Amazon*—South America (6.0); *cohesion* sticking together (0.7); *proteid*—amino acid (0.5).

That the indicated values of these reactions are to some extent erroneous seems probable from the consideration that many more subjects would surely have given them but for our instruction to react with one word; on the other hand, if all our subjects had adhered closely to this instruction we should have had no two word reactions in the frequency tables and the indicated values of many of the one word responses would thereby have been

considerably altered. This applies to the high as well as to the general standard values.

A few foreign words have found their way into the frequency tables (*metabolism*—Stoffwechsel, *protozoon*—Urtiere, *plebeian*—sansculotte, etc.); they should, of course, not have been accepted as reactions.

Proper names of persons are indicated in the tables only by the initial letters, exception being made of historical personages (*Waterloo*—Bluecher, Wellington; *refraction*—Newton; *isomerism*—Pasteur; *Portugal*—Manuel, etc.).

Some few words in the tables seem to be neologisms (*isomerism*—isopometric, mern; *Portugal*—comosh; *declension*—luo; *inquisition*—equisition, exquisition; *amphibious*—ampher, etc.); it is possible that some of these have been incorrectly recorded by the experimenters.

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catalytic	73	feudalism	69	mollusc	21	subtraction	18
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Cervantes	16	geography	1	osmosis	26	tetrahedron	56
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cohesion	87	hexameter	42	percentage	27	vertebrate	36
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I. GEOGRAPHY.

Individuality Frequency, 115.

Failure Frequency, 2.

Africa	(1)	10	countries	(1)	3	history	(10)	76	neurology	1	science	(1)	7
Alaska	(1)	3	country	(1)	6	home geography	1	1	New Jersey	1	sea	1	1
Amazon	1	county	1	house	1		1	1	New York (1)	2	shore	1	1
America	15	cover	1	Illinois	1		1	1	New Zealand	1	sister	1	1
arithmetic	(3)	19	curriculum	1	Indiana	1		1	north	1	soil	(1)	1
Arizona	1	Denmark	1	Iowa	1		1	1	North America	6	South America	4	
Asia	(1)	15	distance	1	island	(1)	5	2			South Carolina	1	
Athens	1	distribution	1	islands	2		1	2			space	1	
Atlantic	3	D.	1	isthmus	1		1	1			Spain	(1)	5
Atlas	(2)	11	drawing	1	Italy	3		1			spell	1	
A.	1	earth	(5)	51	Java	1		1			spelling	3	
Austria	1	east	(1)	1	land	(8)	51	2			sphere	2	
Baku	1	England	(1)	6	lands	1		1			state	(1)	5
B.	1	English	1	Latin	(1)	4		1			S.	(1)	1
Belgium	1	Europe	(2)	22	lesson	1		1			stream	1	
book	(6)	103	Florida	1	location	1		1			study	12	
Boston	3	France	2	London	1		1	1			S.	1	
botany	1	F.	9	Madagascar	1		1	3			Switzerland	2	
boy	1	geodesy	1	magazine	2		1	5			Syria	1	
Brazil	1	geographical	1	Maine	1		1	4			T.	(1)	2
brother	1	geology	(8)	22	Manhattan	1		1			teaching	2	
Bulgaria	1	geometry	2	map	(14)	159		1			place	3	
California	3	geos	(1)	1	maps	(2)	34	1			Tennessee	1	
Canada	1	Germany	3	Massachusetts	1		1	1			territory	1	
chair	1	Gibraltar	1	mathematical	1		1	1			Texas	1	
changed	1	G.	1	mathematics	(1)	4		1			text-book	(1)	2
chart	1	globe	(2)	9	M.	1		1			travel	4	
child	2	grammar	13	M.	1		1	1			Turkey	1	
childhood	1	graph	1	meterology	1		1	1			United States	12	
China	1	Greece	1	Mexico	2		1	2			(2)		
circle	1	ground	1	monography	1		1	2			vocation	1	
class	1	growth	1	M.	1		1	1			war	7	
coast	1	G.	1	M.	1		1	7			W.	1	
C.	1	G.	(1)	1	mountain	7		1			water	2	
commercial	1	H.	1	mountains	5		1	1			world	(2)	24
continent	(1)	3	Hellenes	1	N.	1		1			write	1	
continents	2	hemisphere	1	nation	(1)	2		1			writing	2	
cosmos	1	hills	2	national	1		1	1					

2. PARTICIPLE.

Individuality Frequency, 71.

Failure Frequency, 3.

a	(1)	5	connector	(1)	1	having	6	parse	(1)	2	reading	1	
ablative	2	dangling	2	he	1	parsing	(1)	1	ringing	1		1	
acting	1	decimal	1	ignorance	1	parsnip	1	1	running	(1)		8	
action	4	declension	1	impartial	1	parsnips	(1)	1	sailing	(1)		1	
adjective	(2)	47	definition	3	in	2	part	(1)	1	school	3		
adjunct	1	deponent	1	infinitive	(3)	25	partaking	1		sentence	5		
adverb	(1)	31	doing	(1)	1	ing	(1)	21	particeps	1	singing	1	
agree	1	editorials	1	I.	1	criminis	(1)	1	skin	1			
and	1	egg	1	is	1	participate	(1)	3	small	1			
apostrophe	(1)	1	ending	1	join	1	particle	2	2	speech	(2)	9	
arithmetic	2	English	(1)	6	language	9	particular	1	1	standing	1		
Armstrong	(1)	1	finished	1	Latin	9	partisan	(1)	5	subjunctive	1		
article	2	5:4	1	laughing	(1)	1	part of speech	1	1	supplementary	1		
assistance	1	form	1	lively	1	party	1	1	syntax	1			
atom	1	formation	1	living	1	past	(4)	18	tense	3			
B.	1	fraction	3	lying	1	perfect	1	1	the	(1)	13		
being	(2)	13	gerund	(1)	9	modifier	2	phrase	(1)	15	thinking	1	
bending	1	gerundive	1	modifying	1	pleasing	1	1	to	8			
breaking	1	going	(1)	12	money	1	predicate	2	2	transitive	1		
but	1	governor	1	municipal	1	preposition	(2)	16	verb	(28)	195		
clause	2	grammar	(17)	179	New Testament	1	present	8	8	verbal	1		
combination	1	grammar	school	1	noun	(15)	131	principle	4	4	verbs	2	
composition	1	Greek	1	nouns	2	pronoun	(1)	18	word	29			
conjugation	2	had	1	of	(1)	8	pupil	1	1	words	4		
conjunction	(1)	7	hanging	1	parenthesis	1							

3. WATERLOO.

Individuality Frequency, 65.

Failure Frequency, 0.

Allies fighting	1	brother	1	fighting	2	losses	(1)	1	Sedan	2	
Amiens	1	Brussels	(1)	4	France	3	Louisburg	1	Seneca Falls	1	
Amsterdam	1	Bunker Hill	1	French	(1)	4	luck	1	town	3	
Asia	1	Cedar Falls	1	funny	1	map	1	Victor Hugo	1		
Austerlitz (1)	2	Cedar Rapids	4	general	1	Marne	(1)	1	victory	2	
battle (22) 233		Chelsea	1	German	(1)	1	Metz	(1)	1	war	10
battle-field	1	Chemnitz	1	Germans	2	military	1	warfare	1		
battle-ground	1	church	1	Germany	1	monument	2	water	(1)	3	
beer	1	city	1	Gettysburg	4	Napoleon (46) 505		Waterbury	2		
Beethoven	1	Courtrai	1	Ghent	1	Nelson	1	water lilies	1		
Belgian	1	defeat	13	Hastings	(1)	2	Ney	1	water lily	(1)	
Belgians	1	defeats	1	history	(3)	9	painting	1	watermelon	1	
Belgium (3) 15		ditch	1	home	1	Paris	(1)	1	Watertown	1	
Berlin	1	doubtful	1	image	1	picture	1	weather	1		
bird	1	eighteen-fifteen	1	insurance	1	plain	(1)	1	Wellington (11) 72		
Blenheim	1	English	1	Iowa	(1)	13	Quatre Bras	1	Westminster	1	
Blucher (2) 10		fate	1	Kaiser	1	Rheims	1	willow	1		
Bonaparte	3	field	4	Les Miserables	1	river	2	Yorktown	1		
bridge	1	fight	3	lily	1						

4. REFRACTION.

Individuality Frequency, 78.

Failure Frequency, 5.

air	1	curves	1	incidence	(1)	4	oculist	(1)	3	slanting	1
amputation	1	curving	1	index	(5)	23	optical	(1)	2	Snellen	(1)
angle	5	cut	1	indices	1	optician	3	spectacles	1		
arithmetic	2	deflection	4	indirect	1	optics	10	spectrum	1		
astigmatism	1	D.	1	industry	1	period	1	spoon	1		
atmosphere (1)	2	destruction	1	inflection	(1)	4	physics	(3)	60	stare	1
back	1	deviation	1	infraction	5	physiology	1	strike	1		
balsam	1	diagram	2	intensity	1	picture	2	subtraction	3		
bend	3	diffraction (2)	19	interaction	1	polariscope	(1)	1	sugar	1	
bending (2) 17		diffusion (1)	2	Latin	1	polarization	3	sun	6		
bent	2	dispersion	2	law	1	prism	(1)	24	sunlight	1	
blackboard	1	error (1)	4	leg	1	psychology	1	think	1		
blow	1	eye (4)	29	lens	(3)	36	quartz	1	thinking	1	
bound	1	eye glass	1	lenses	2	rafter	1	thought	1		
breaking	5	eye glasses	2	light	(35)	374	ray	(1)	4	transparent (1)	1
broke	1	eyes (2)	20	likeness	1	rays	10	turning	2		
broken	1	eye sight	3	M.	1	reflect	1	ugly	1		
chemistry	1	feldspar	1	mathematics	1	reflection	(11)	68	undisciplined	1	
clinic	1	fraction	9	microscope (2)	5	reflex	2	vision	1		
college	1	fractions	1	minerals (1)	1	refractometer	4	water (1)	13		
color (1)	2	glare	1	mirror	5	refractory	5	waves	1		
colors	1	glass (10)	76	muscular	1	refrigerator	2	windows	2		
condensation	1	glasses	10	Myles Standish	1	replacing	1	withdrawing	1		
contraction	3	grating	(1)	2	myopia (1)	1	repulsion (1)	1	word	1	
contrary	1	high	(1)	1	Newton	1	R.	1	zoology	1	
crystal (1)	2	Huyghen	1	oar	1	science	3				
crystals	1	ice	(1)	1	obliquely	1	serum	1			

5. ARITHMETIC.

Individuality Frequency, 86.

Failure Frequency, 1.

add	2	difficulty	1	history	4	one	2	standard	1
adding	1	dislike	2	interest	3	order	1	standard tests	1
addition	(3) 34	displeasure	1	Kant	1	pedagogue	1	student	1
agony	1	division	2	language	1	pencil	3	study	(2) 15
algebra	(11) 91	dollars	1	lesson	1	percentage	(1) 4	subtraction	1
A.	1	easy	1	logarithms	1	plus	3	sum	(1) 11
Arabic	1	examination	1	M.	1	practice	1	sums	(1) 17
blackboard	1	example	(1) 5	mathematics	(5) 80	problem	(1) 11	tables	1
book	(2) 45	examples	3	man	(1) 1	problems	10	teach	1
books	(1) 2	farm	1	matriculate	1	progression	1	teacher	5
B.	1	figure	7	medicine	1	proportion	1	teaching	3
brother	1	figures	(3) 60	mensuration	2	quaternions	(1) 1	ten	1
business	1	five	1	mental	(1) 12	rapidity	1	text	1
calculation	(2) 8	fools	1	metric	1	R.	(1) 1	thirty-four	1
calculations	1	formula	1	M.	1	reading	2	three	1
calculus	(2) 5	forty-five	(1) 1	M.	3	R.	1	three r's	(1) 2
ciphering	(1) 1	four	4	minus	1	rudimentary	1	torn	1
class	2	fraction	6	multiple	1	R.	1	trigonometry	3
commercial	2	fractions	20	multiplication	29	scholar	1	trouble	(1) 2
complete	1	geography	(6) 44		(6)	school	25	twice	1
computation	(1) 5	geometry	(4) 30	multiply	2	school days	1	two	(2) 14
coordinate	1	German	1	multiplying	(1) 3	science	5	two plus two	1
counting	1	grade	2	music	1	seven	1	two times two	1
counting frames	1	grammar	(1) 9	Newton	(1) 1	simple	1	unpleasantness	1
C.	1	green (book)	1	N.	1	six	(1) 2	W.	2
C.	2	G.	(1) 1	notation	3	slate	(1) 1	W.	1
decimal	2	H.	1	number	(12) 85	spell	1	W.	1
decimals	1	hard	3	numbers	(16) 131	spelling	(3) 21	word	1
declensions	1	hell	1	numerals	1	square root	1	work	4
difficult	1								

6. BOTANY.

Individuality Frequency, 122.

Failure Frequency, 0.

alchemy	1	corolla	1	geometry	2	L.	1	roots	1
algae	1	corona	1	George Ade	1	lobate	1	rose	7
algebra	(1) 4	C.	1	geranium	1	magnifier	1	roses	1
analysis	1	course	1	G.	1	manual	1	sassafras	1
analyzing	1	crucial	1	girls	1	materia medica	1	school	5
anatomy	1	cryptogam	1	good	1	M.	1	S.	1
astronomy	1	cryptogamic	(1) 2	grass	1	methodic	1	science	(4) 27
bacteria	1	C.	1	G.	(1) 6	microscope	2	sensibility	(1) 1
bay	2	daisies	1	Greek	1	microscopy	1	sister	1
biogen	1	daisy	1	green	2	M.	1	soil	1
biology	(2) 25	dandelion	2	H.	1	mother	(1) 2	specimens	1
bird	1	department	(1) 1	hate	1	nature	2	stamen	1
blue	1	diagram	1	hepatica	1	M.	1	S.	1
blue book	1	difficult	1	herbarium	3	oak	(1) 1	structure	1
book	8	dissection	1	herbs	(1) 1	one	1	study	(3) 11
books	1	drawings	1	histology	1	one B	1	teacher	3
B.	1	dry	1	history	1	orchid	1	teaching	(1) 2
bug	1	D.	1	H.	1	pansies	1	text book	1
bugs	(1) 3	earth	1	honeysuckle	1	paramoecium	1	T.	1
butter	1	examination	(1) 2	horticulture	1	petal	3	tree	2
buttercup	1	experiments	1	house	1	physics	3	trees	5
buttermilk	1	fellowship	1	Hunter	1	physiology	4	tulip	2
buttons	1	fern	1	H.	1	picture	1	T.	2
cabbage	1	ferns	2	ignorance	1	P.	1	vermicelli	1
calisthenics	1	field	1	interesting	1	plant	(16) 85	violets	1
calyx	(1) 1	fields	1	J.	1	plant life	1	walks	1
chemistry	(2) 3	floriculture	1	laboratory	(1) 8	plants	(20) 144	W.	1
chlorophyll	2	flower	(8) 121	lamp	1	professor	1	willow tree	1
class	(1) 1	flowers	(8) 205	Latin	1	psychology	3	wood	2
college	2	F.	1	leaf	(1) 8	pterodactyl	1	woods	1
C.	2	garden	1	leaves	11	R.	1	W.	1
C.	1	geography	(2) 8	lecture	1	R.	1	work	1
corn	1	geology	(3) 23	L.	1	R.	1	zoology	(16) 108

7. ISOMERISM.

Individuality Frequency, 168.

Failure Frequency, (3) 214.

acid	1	equal	(3)	30	isomerograph	1	nucleus	1	socialism	1		
aldehydes	1	equality	(1)	9	isomeric	2	one	1	somatic	1		
algebra	3	equal parts		1	isometric	(1)	35	optic	1	something equal	1	
alike	(1)	2	equals	1	isoperimetric	1	optical	1	somnambulism	9		
allomorph	1	esoteric	2	isopometric	1	organic	(1)	7	somnambulist	5		
allotropy	1	evenness	1	isos	(1)	4	organic		spar	1		
angle worm	1	examination	(1)	1	isosceles	(1)	33	chemistry	1	speech	1	
animal	1	experiment		1	isotherm	15	O.	1	starch	(1)		
atoms	(1)	1	eye	1	isothermal	7	pane	1	stereo	2		
barometer	1	eyes	2	isothermic	3	paraffin	1	stereochemistry	3			
benzene	(1)	2	feldspar	1	isothermism	1	Pasteur	1	stoichiometry	1		
biology	(1)	1	form	1	isotherms	1	pentane	1	structure	1		
blankness	1	formaldehyde	(1)	1	isotropic	(2)	3	philology	1	substances	(1)	
carbon	5	formula	1	isotropism	(1)	1	physics	(2)	sugar	1		
cataclysm	1	geographic	1	isotropy	(1)	1	physiology	1	sugars	2		
chain	1	geography	12	ketone	1	poetry	1	Sumirians	1			
change	1	geology	(1)	2	lens	1	polarization	1	summarization	1		
changing	1	geometry	(3)	25	light	(1)	16	polymer	(1)	summer	2	
chart	(1)	2	glove	1	like	(1)	5	polymeric	1	sun	1	
chemical	(3)	5	graduate	(1)	1	likeness	(1)	8	polymerism	(2)	symmetrical	1
chemicals	1	Greek	13	line	2	polymorphism	1	symmetry	1			
chemistry	(28)	109	group	(1)	1	precision	1	synchronism	1			
circles	3	handsome	1	lines	10	prism	(1)	tangent	1			
climate	(1)	1	hard	1	man	1	pressure	1	tartaric	(2)		
cobalt	1	haziness	1	mannerism	1	prism	(1)	tautology	1			
cold	1	heat	(1)	24	mathematics	9	problem	1	tautomerism	1		
college	1	heat lines	1	matter	1	protoplasm	1	technical	(1)			
compounds	(1)	2	homogeneity	(1)	1	meaning	1	temperature	6			
concentric	1	homogeneous	1	measure	2	quartz	1	term	1			
constitution	2	H.	1	measurement	(1)	4	question	2	tetrahedral	1		
crystal	(4)	13	hyperbola	1	meridians	1	racemic	1	tetrahedron	1		
crystallization	1	hypnotism	1	mern	1	radiator	1	theory	1			
	(3)	hysteria	1	mesmerism	(1)	4	refraction	1	three	1		
crystallography	5	ice	1	metamerism	3	rhetoric	2	tissues	1			
crystals	(4)	15	Iceland	1	metamorphic	1	rubbish	1	triangle	(1)		
cube	(1)	1	icicle	1	metamorphism	1	same	4	triangles	(1)		
curve	(1)	1	icicles	1	metaphysics	1	same form	1	trigonometry	5		
definition	1	iconoclast	1	meter	1	sameness	2	two	1			
degrees	1	ignorance	3	mica	1	science	5	understand	1			
derivation	1	incomprehensible	1	microscope	1	scientific	1	uniform	1			
diagram	2	inequality	1	M.	(1)	1	seismograph	1	uniformity	1		
dictionary	(1)	11	insomnia	5	model	1	separate	1	warmth	1		
differential	1	investigation	1	models	1	similarities	1	waves	1			
difficult	1	ism	1	moment	1	similarity	(3)	weather	3			
disease	1	isobars	1	movement	1	sleep	14	weather chart	1			
dream	1	isochronism	1	music	1	sleepiness	2	word	3			
eantiotropy	1	isodynamic	1	mysticism	1	sleeplessness	4	zoology	1			
earth	1	isolated	1	N.	1	sleepy	1					
electricity	1	isomere	(1)	4								

8. PORTUGAL.

Individuality Frequency, 95.

Failure Frequency, 1.

adjacent	1	continent	1	Hayti	1	mountains	(1)	1	rocky	1	
Africa	1	country	(6)	84	heat	1	nation	(1)	3	romantic	1
Alfonso	5	dago	1	Iberian	1	navigator	(1)	1	Rome	1	
alliance	1	darkness	1	India	1	niggers	1	Roumania	1		
ally	1	Delagon Bay	(1)	1	insurrection	1	ocean	1	sea	1	
armadillo	1	distance	1	island	1	Oporto	3	shape	(1)		
army	1	earthquake	(1)	1	Italy	3	peninsula	4	ship	1	
Atlantic	1	Emanuel	5	king	(2)	29	people	1	small	3	
Belgium	1	England	3	King Alfonso	1	person	1	South America	3		
Bermuda	1	English	1	King Manuel	(1)	1	Peru	1	Spain	(49)	
black	1	Europe	(1)	27	kings	1	pirates	1	Spaniard	(1)	
Braganza	(1)	1	European	1	knavery	1	politics	1	Spanish	(2)	
Brazil	2	explorer	1	land	6	porch	1	state	(2)		
brown	1	Farragut	1	language	1	port	3	S.	1		
Cabral	(1)	1	fishing	1	Lisbon	(12)	74	strip	1		
Camoens	1	1	foreigners	1	location	3	Port Juan	1	T.	1	
Canary Islands	1	France	(1)	6	Lopez	1	Porto	1	troops	1	
cap	1	G.	3	Madrid	(1)	3	Portuguese	(2)	troubled	1	
cape	1	geese	1	Maine	1	president	1	Turkey	1		
capital	2	geography	(1)	1	man	2	prince	1	Uruguay	1	
C.	1	Gibraltar	1	Manuel	(2)	29	principality	1	Venice	1	
child	1	government	1	map	(3)	31	prism	1	war	(1)	
city	3	grapes	1	maps	1	queen	1	water	1		
coast	2	Greece	3	Martha's	1	Quito	(1)	1	wine	(1)	
Coimbra	2	Greenland	1	Vineyard	1	republic	(1)	13	W.	1	
Columbus	2	Guiana	1	Mediterranean	1	revolution	9	yellow	2		
Comosh	1	guinea	1	mill race	1	river	1				

9. AMOEBA.

Individuality Frequency, 150.

Failure Frequency, (1) 36.

albumen	1	crawling	1	H.	1	neuron	1	shapes	1
ameliorate	1	cryptogamic	(1)	heart	1	nitella	1	silkworm	1
amethyst	1	cytoplasm	1	histology	1	nucleus	6	simple	4
amoeboid	2	Darwin	1	histolytic	1	omega	1	slide	(1) 2
anaemic	2	D.	1	histolytica	1	one cell	1	slime	1
anatomy	1	diagram	1	hydra	4	organism	(1) 7	slimy	1
animal (12)	108	dictionary	1	inert	1	paramnesia	1	small	(1) 15
animalcule (2)	7	differential	1	infinitesimal	1	paramoecium	32	small animal	1
animal life	1	difficult	1	infusoria	1	(7)		smallest	1
animals	1	diffugia	1	infusorian	1	parasite	4	smallness	1
ant	2	diphtheria	1	insect	1	pastoral	1	S.	1
atom	3	D.	1	irregular	1	patch	1	soft	2
bacilli	1	dysentery	10	jar	1	penicillium	(1) 1	somewhere	1
Uacillus (1)	1	ecology	1	jelly	(4) 20	physiology	4	sound	1
bacteria (2)	6	education	1	jelly-fish	(1) 9	picture	(1) 4	South America	1
bacteriology	3	egg	3	jelly-like	2	plant	(1) 7	spot	1
bacterium	1	E.	1	J.	(1) 1	plasmodium	1	squirming	2
B.	1	engulfment	1	knife	1	polyp	1	star	1
beginning	3	evolution	5	laboratory	3	primitive	(1) 3	statue	1
biology (4)	83	fauna	1	lamp	1	primordial	(1) 1	S.	2
birth	1	field	1	lecture	1	proteus	(4) 14	syphilis	1
blood	1	first	1	life	16	protista	1	technical	1
body	2	fish	6	light	(1) 1	protoplasm	(7) 54	teeth	(1) 1
botany	12	flat	1	limax	(1)	protozoa	(11) 67	tentacles	1
bug (2)	15	float	1	little	3	protozoon	(4) 25	tiny	1
bugs	8	flow	1	living cell	1	protozoons	1	tomorrow	1
B.	1	flower	1	L.	1	pseudopod	2	T.	1
butterfly	1	flowers	1	lowest	(1) 2	pseudopodia	(1) 5	unicellular	(2) 5
C.	(1)	foot	1	L.	1	pseudopodium	1	unseeable	1
cell	(3) 51	form	4	man	2	pseudopods	1	vacuole	2
cells (1)	3	fossil	1	me	1	psychology	5	voting	1
cellular	1	fresh	1	microbe	(1) 2	reactions	1	vulgaris	1
chart	1	friend	(1)	microorganism	2	read	1	water	(2) 14
chromatin	1	frog	2	microscope	(3) 37	rhizopod	(1) 1	water lily	(1) 1
cilia	4	gelatinous	2	microscopic	1	rhombus	1	weakness	1
C.	1	Geneva	1	minute	1	round	1	wiggle	1
C.	1	geology	1	molecule	2	S.	1	wiggling	1
cocoon	1	geometry	1	monocellular	1	science	3	W.	(1) 1
C.	1	germ	(1)	motility	1	sea	1	woolly	1
contractility	1	G.	1	motion	1	secondary	1	word	1
corpuscle	1	globule	1	movement	(1) 3	education	1	worm	2
corpuscles	1	green	1	mud	1	shape	1	zoogloea	1
C.	1	Haeckel	1	mussel	1	shapeless	1	zoology	(4) 60
crawl	1	haematococcus	1	natural history	1				

10. DECLENSION.

Individuality Frequency, 61.

Failure Frequency (1) 3.

ablative	1	D.	1	F.	1	masculine	1	sum	1
addition	2	decipher	1	form	4	mensa	(1) 5	sun	1
adjective (1)	1	declination	(1)	four	1	musa	1	syntax	1
adverb	2	decline	9	French	3	noun	(29) 331	tabulation	(1) 1
afraid	1	declined	1	gender	1	nouns	(4) 40	textbook	1
ambiguous	1	declining	(1)	German	(1) 12	o	1	think	1
amo	1	definition	2	grammar	(19) 167	paradigm	3	third	1
analysis	1	der	2	grammatical	(1) 1	paradigms	1	trouble	1
analyze	1	descent	1	Greek	3	paraphrase	1	tuba	1
Anglo-Saxon	1	description	1	hic	1	parsing	(1) 4	turn	1
arrangement	2	detention	1	I	1	participle	(1) 4	variation	1
ascension	2	diagnosis	1	inflection	(1) 5	preposition	1	verb	(16) 90
blackboard	1	diagram	1	interrogation	1	pronoun	(1) 8	verbs	(1) 6
bugbear	1	difficulties	(1)	language	7	school	2	vocative	1
Caesar	1	difficulty	1	languages	1	sentence	2	walk	1
case	3	ending	(1)	Latin	(8) 91	slope	1	word	12
cases	1	endings	1	line	1	speech	1	words	(1) 5
changing	1	English	5	list	1	spelling	1	work	2
conjugation (8)	82	falling	1	luo	1	stars	1	writing	1
conjugations	1	first	3						

II. BURETTE.

Individuality Frequency, 121.

Failure Frequency (2) 154.

12. PHYSICS.

Individuality Frequency, 147.

Failure Frequency, 2.

abomination	1	conservation	1	H.	1	mechanical	2	scales
activity	(1)	C.	1	high school	4	mechanics	(1)	school
algebra	1	course	1	H.	2	medicine	7	6
Alwood's		C.	3	history	1	metals	3	science
machine	1	crew	1	H.	(1)	mine	1	sciences
A.	1	crucible	1	H.	1	mirror	1	scientific
ammeter	1	darkness	1	H.	1	motion	1	S.
anatomy	2	demonstration	1	H.	1	motor	1	shears
anamoly	1	department	(1)	2	index	1	sinuous	
apparatus	(3)	difficult	3	instrument	1	movement	1	S.
Archimedes	2	dislike	1	instruments	1	myself	1	solid
astronomy	(4)	dogs	1	interesting	3	natural	1	solids
A.	1	drudgery	1	iron	1	nature	2	sound
balance	1	dynamics	1	J.	1	Newton	6	specific
balancing	1	earth	1	K.	1	optics	3	spelling
ball	1	electricity	(3)	31	kinetic	1	P.	1
battery	(1)	energy	(1)	4	knowledge	1	pendulum	1
beauty	1	engineering	1	K.	2	P.	1	study
B.	1	everlasting	1	K.	2	P.	5	subject
bodies	1	examples	1	laboratory	(3)	1	phenomena	1
body	1	experiment	8	L.	1	philosophy	3	table
book	(4)	experiments	9	Latin	(1)	1	physic	2
B.	1	expositions	1	law	1	physical	4	teacher
botany	2	failure	1	laws	(2)	8	teaching	(1)
bottle	1	F.	1	lecture	(1)	9	telegraphy	1
Boyle	1	figs	1	L.	2	physician	2	tesla
Boyle's Law	1	figures	1	L.	1	physicist	1	test
brother	1	force	(3)	9	lever	(1)	2	test tube
building	(1)	forces	1	levers	5	5	test tubes	2
Bunsen burner	1	freshmen	(1)	1	light	(6)	P.	7
burette	1	fundamental	1	line	33	1	P.	1
C.	3	gas	1	low	1	problems	2	text book
castor oil	1	geography	1	machine	1	profession	(1)	1
change	(1)	geology	1	machines	1	professor	2	training
chemist	1	geometry	(1)	2	magnetism	(1)	3	U.
chemistry	(36)	gravitation	1	1	2	pulley	1	vacuum
cinch	1	gravity	2	mass	(1)	1	2	vapor
class	4	G.	1	material	(2)	radioactivity	V.	1
class room	2	gumbo	1	mathematical	(1)	1	water	4
C.	1	G.	1	mathematics	(1)	red	2	weight
cold	1	H.	1	matter	(5)	16	4	weights
C.	1	hard	7	measure	13	R.	1	Wellesley
college	7	hate	1	measurement	1	refraction	4	Wesleyan
C.	(1)	heat	(1)	10	measurements	(1)	1	W.
conditions	1	hemisphere	1	measuring	2	refractometer	1	W.

13. HYPERBOLE.

Individuality Frequency, 128.

Failure Frequency, (1) 10.

adjective	1	curved line	1	fraud	1	lies	2	school girl	2	
aeroplane	1	curves	(1)	Frenchman	1	line	(1)	sentence	1	
algebra	2	daffodils	1	function	2	literature	4	S.	(1) 1	
amoeba	1	dash	1	geography	1	logic	2	shape	(1) 2	
analytics (1)	5	diastole	1	geometric	1	lying	2	sideral	1	
A.	1	dictionary	1	geometry	(10)	55	L.	simile	16	
apostrophe	1	difference	1	girl	1	mathematical	(1)	sky	1	
arc	1	difficult	(1)	girlish	1	mathematics	(5)	slang	1	
arch (1)	1	digression	1	girls	1	metaphor	(2)	soaring	1	
arithmetic	1	doubt	1	grade	1	metonymy	3	speak	1	
astronomy	7	E.	1	grammar	(3)	28	misconception	1	speech	(2) 13
asymptote (1)	3	ellipse	(2)	grammatical	(1)	mispronounci-	1	statement	2	
asymptotes	1	elliptic	1	graphs	1	ation	1	story	(2) 3	
Aurora Borealis	1	English	(1)	heavens	(1)	mountains	1	stretched	1	
awful	1	enthusiasm	1	high	2	nouns	1	stretching	2	
axis	1	equation	1	high school	1	onomatopoeia	2	study	1	
ball	1	exaggerate	3	high sounding	1	oratory	(1)	superfluity	1	
beauty	1	exaggerated	1	hyacinth	1	oval	2	superfluous	1	
B.	1	exaggeration	211	hydrophobia	1	page	1	superlative	1	
blackboard	2		(19)	hyperbola	(1)	parabola	(9)	swelled	1	
bombast	2	excess	2	hyperboloid	1	parabolic	1	S.	1	
book	2	excessive	(1)	hypertrophy	2	parallax	1	synecdoche	7	
bowl	1	excitement	1	hyphen	2	parallel	1	synonym	6	
bridge	1	exclamation	(1)	hypostoma	1	parallelogram	1	syntax	1	
calculus	2	expanded	(1)	hypothesis	(1)	(1)	T.	T.	1	
C.	1	expression	3	imagination	1	participle	1	too	2	
C.	1	extravagance	6	impossible	1	part of speech	1	triangle	(2) 7	
chart	1	extravagant	(1)	indirect	(1)	personification	3	trigonometry	5	
Cicero	1	extreme	(1)	3	interjection	3	petrography	1	trope	(1) 1
circle	11	fables	1	isosceles	1	phrase	1	truth	1	
class	2	false	1	joke	3	picture	1	untruth	1	
coal	1	falsehood	1	J.	1	poetry	3	untruthfulness	1	
comets	1	falsity	1	Kaiser	1	R.	1	unusual	1	
comparison	1	figure	(3)	K.	1	rectangular	1	water	1	
composition	3		53	L.	1	redundancy	2	W.	1	
cone	1	figure of speech	1	language	(1)	7	refraction	1	women	1
conic (1)	2	figures	1	laugh	1	requa	1	wonderful	1	
C.	1	F.	1	liar	1	rhetoric	(3)	word	5	
curve	(10)	80	form	1	lie	(1)	ring	1	words	2
curved			1 F.		19	school	1			

14. RETINA.

Individuality Frequency, 60.

Failure Frequency, 2.

addition	1	cone	1	fovea	1	nervous	(1)	2	reticent	1
anatomy	1	cones	3	G.	1	Netzhaut	1	reticular	1	
bluish (1)	1	conjunctiva	1	glass	1	neuron	(1)	reticule	2	
body	1	convex	1	glasses	3	oculist	(1)	retine	2	
camera	2	cornea	4	histology	(1)	optic	(1)	rod	1	
cell (1)	1	corona	1	hygiene	1	optical	(1)	rods	3	
cells	2	dark	1	image	2	optic nerve	1	sclerotic	1	
Charlemagne	1	defective	1	iris	(1)	13	optics	(1)	shape	1
choroid	4	delicate	1	king	1	periphery	1	sight	(1) 8	
cigar	1	diagram	(1)	2	lens	6	photographic	1	spectacle	1
cinder	1	E.	1	light	(2)	9	physiology	(1)	synapse	1
circle	1	eye	(80)	817	lining	1	picture	1	text-book	1
class	1	eye ball	4	near-sight	1	pigment	(1)	1	type	1
coat	1	eye glass	1	nerve	2	psychology	4	unpleasant	1	
color	1	eyes	6	nerve cell	1	pupil	4	vision	(1) 6	
colors	1	eye sight	(1)	1	nerve endings	1	ray	(1)	1	visual
color theory	1	eye strain	1		(1)	rays	1	wonder	2	
concave		fatigue	2	nerves	1	retain	1		1	

15. COAGULATION.

Individuality Frequency, 104.

Failure Frequency, 4.

16. CERVANTES.

Individuality Frequency, 99.

Failure Frequency, (1) 65.

Africa	1	Don Quixote	king	1	persons	1	scientists	1
A.	1	(42)	310	Latin	4	Philippines	1	seer
art	1	drama	literary	1	philosopher	6	S.	
author	17	Dumas	literature (2)	11	philosophy	4	servant	
B.	1	Dutch	Lope da Vega	1	photograph	1	servants	
battle	2	east	Machiavelli	1	picture	1	ship	
biology	1	eccentricity	man	23	place	1	Socrates	
bone	1	education	mediaeval	1	plant	1	soldier	
book	(5)	19	English	3	plants	1	Spain (25) 162	
books	1	exaggeration	Michael	1	poet (1)	7	Spaniard (1) 14	
brain	1	exploration (1)	Miguel	1	poetry	1	Spanish (7) 85	
Calderon	1	explorer	military	1	pottery	1	Spanish	
castle	1	famous	Milton	1	print	1	literature	
cavalier	1	fiction	mind	1	prison	1	speech	
certain	1	following	M.	1	Quixote (1)	5	spine	
cervical	(1)	1	France	1	Quo Vadis	1	story	
cervix	1	French	mystery	1	reading	1	survey	
character	1	Frenchman	mythology (1)	2	romance	1	surveying	
chivalry	1	G.	name (1)	11	romantic	1	surveyor	
Cid	4	general	Napoleon	1	Roosevelt	1	town	
city	3	great	neck	2	Rozinante	1	transit	
classical	1	Greece	noted	1	Sancho Panza	3	Victor Hugo	
comedy	1	Greek	novel (1)	8	(1)	1	warrior	
Cortez	1	heroes	novelist	1	satirist	1	water	
cuneiform	1	Hindu	oration	1	Savannah (1)	3	wind mill (2)	
Dante	(1)	3	historical	2	savant	1	wind mills (2)	
discoverer	1	history	pageant	1	Savonarolla (1)	1	wise	
Disraeli	1	Huerta	painter	1	scholar	1	word	
Don Quar	1	humor	painting	1	science	2	writer (1) 12	
Don	1	idealism	Panza	1	scientist	2	writing	
		Italian	person	9				

17. FRANCHISE.

Individuality Frequency, 102.

Failure Frequency, 1.

act	(1)	1	corporations	1	French	2	negroes	(1)	1	street cars	3
agreement	1	country	3	friendship	(1)	1	New York	1	street railways	1	
American	2	court	1	government	(2)	26	niggers	1	strike	1	
anti-suffrage	1	crook	1	graft	(2)	9	Pankhurst	2	subway	1	
attraction	1	daughter	1	grant	(1)	4	paper	1	suffrage	(5) 79	
automobile	1	debt	1	granting	2	papers	1	suffragette	(1) 6		
ballots	1	democracy	1	history	7	people	1	suffragettes	(1) 2		
ballot	(1)	5	department	1	honor	1	permission	3	suffragism	(1) 2	
baseball	1	dictation	1	house	1	permit	4	suffragist	1		
bicycle	1	disenfranchise	1	independence	1	petition	1	tariff	1		
bill	1	disfranchise	1	interborough	2	policy	1	tax	(2) 8		
Boulder	2	document	2	Italian	3	politician	(1)	2	taxes	1	
business	4	D. U. R.	1	Kansas City	1	politics	(3)	17	town	(2) 5	
car	4	economics	2	land	1	Portland	1	traction	1		
car fare	1	election	6	law	(2)	29	privilege	(1)	10	trade	1
cars	2	electoral	(1)	lawyer	1	public	5	tramway	1		
charter	8	electric	1	league	(1)	3	railroad	(4)	46	transportation	1
Chicago	1	embargo	1	lease	1	railroads	(1)	9	treaty	1	
choice	1	endorsement	1	legal	5	railway	(3)	36	trolley	(1) 5	
cities	1	enfranchise	1	legality	1	railways	2	universal	1		
citizen	2	England	1	liberation	1	regret	1	unlimited	(1) 1		
citizenship	3	entanglement	(1)	liberty	4	regulations	1	utilities	1		
city	(6)	77	equal	6	license	1	right	(1)	8	utility	1
city government	1	equality	1	light	1	rights	3	Venezuela	1		
civics	3	Europe	1	liquor	1	road	1	ville franche	1		
civil	1	favor	2	loss	1	school	1	vote	(23) 151		
code	1	firm	1	M.	1	selfish	1	voter	(1) 3		
commerce	1	forfeit	1	make	1	slave	1	votes	(2) 23		
commission	1	Francais	1	man	1	slavery	2	voting	(4) 20		
company	3	France	3	merchandise	1	slaves	3	war	1		
compromise	1	Francis Joseph	1	money	4	state	3	water	1		
consent	1	frantic	(1)	municipal	(5)	17	statement	2	woman	(1) 31	
constitution	1	fraud	2	municipality	5	steal	1	woman's			
contract	5	free	4	M.	1	street	(1)	1	suffrage	(2) 3	
corporation	(3)	16	freedom	(1)	17	negro	(1)	11	street car	20	
									women	(7) 64	

18. SUBTRACTION.

Individuality Frequency, 55.

Failure Frequency, 0.

abacus	1	contraction	1	fraction	2	minus sign	(1)	5	separation	3	
accounts	1	C.	(1)	fractions	1	money	(1)	3	sign	2	
add	6	credits	1	fundamentals	1	motion	1	stocks	1		
addition	(41)	395	dash	(1)	2	multiplication	60	subdivision	1		
additions	1	deduct	1	grade	1	multiply	1	subnormal	1		
algebra	1	deduction	(1)	3	inverse	number	(1)	7	subtrahend	(1) 2	
Alice in				1	operation	(1)	1	numbers	(4)	38	
Alice in				1	kindergarten	1	numerator	1	sum	(1) 11	
Wonderland	1	D.	1						table	1	
analysis	1	difference	(2)	8	Latin	1	operation	3	take	4	
arithmetic	(19)	253	differences	1	less	(1)	6	paper	2	taking away	(1) 4
attraction	1	diminution	1	line	2	plus	1	teaching	1		
Austrian	2	distraction	2	logarithm	1	poverty	1	tests	1		
away	2	division	(3)	10	loss	(1)	4	problem	(1)	twenty-five	1
baby	1	dollars	1	machine	1	problems	1	two	3		
blackboard	1	elimination	1	mathematical	(1)	1	process	(1)	under	(1) 1	
book	1	example	2	mathematics	(2)	24	reduce	1	withdrawal	1	
Burroughs	1	father	1	method	1	remainder	1	word	1		
calculation	4	figures	(3)	21	minuend	(2)	6	removal	(1)	work	2
children	1	four	1	minus	(2)	29	school	4	wrong	1	

19. METABOLISM.

Individuality Frequency, 169.
Failure Frequency, (2) 57.

Failure Frequency, (1)			
absorption	2	chemical	1
activity	2	chemistry	(8) 44
after	1	chewing	1
albumen	1	C.	1
algebra	1	coagulation	2
alteration	1	color-blind	1
amoeba	2	combination	1
anabolic	1	concentration	1
anabolism	(6) 39	construction	(1)
anaemia	1	constructive	1
anatomy	1	converting	1
animal	(1)	curve	1
animals	3	cycle	1
ascending	1	cylinder	1
assemblage	1	death	4
assimilate	1	decomposition	(1) 1
assimilation	10	destruction	3
atavism	1	destruction of	
Atwater	1	tissue	1
B.	1	development	(1)
bimetallism	1	diabetes	1
bio-chemistry	1	diathermy	1
biology	(7) 40	diet	1
blood	19	dietetics	2
blue-yellow	1	difficult	1
body	(3) 19	digestion	(8) 41
book	1	digestive	1
botany	(1)	dinner	1
boy	(1)	disease	1
brain	1	divisions	1
build	2	doctor	1
building	8	eat	1
building up	3	eating	2
burning	(1)	eccentric	1
cages	1	education	1
cannibal	1	electricity	1
carbohydrates	1	elision	1
carbonic acid	(1)	embolism	1
catalysis	(1)	energy	1
Catholicism	1	enigma	1
cell	(2) 13	esoteric	1
cell division	1	excretion	1
cells	(2) 3	experiment	1
change	(12) 110	eye	1
changeableness	1	fermentation	1
changes	2	F.	1
changing	(1)	food	(9) 47
			method
			1
			M.
			1
			microscope
			1
			mind
			1
			mines
			1
			mirror
			1
			mixture
			1
			monograph
			1
			more
			1
			motion
			1
			mouse
			1
			movement
			1
			moving
			2
			multiplication
			1
			mutable
			1
			nearness
			1
			nerves
			1
			nitrogen
			1
			nourishing
			1
			nourishment
			4
			nutriment
			2
			nutritive
			(1) 15
			operation
			1
			organic
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			hyperbole
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			indigestion
			1
			infants
			1
			inhibition
			(1)
			1

20. PREDICATE.

Individuality Frequency, 58.

Failure Frequency, 1.

21. MOLLUSC.

Individuality Frequency, 96.

22. INQUISITION.

Individuality Frequency, 105.

Failure Frequency, 5.						
acquire	1	English	1	indulgence	1	murder
acquiring	1	equisition	1	inquire	1	oppression (1)
acquisition	2	Europe	1	inquiry (1)	8	pain
Alva	1	events	1	inquisitive	4	popacy
anarchism	1	examination	1	inquisitiveness	1	paper
ask	3	exposition	1	interrogation	1	people
battle	2	equisition	1	intolerance	1	persecution (1)
bigotry (1)	3	faith	1	introspection	1	Philip (1)
burning	1	force	1	invasion	1	picture
Calvin	1	France	15	investigation	3	pictures
Catholic (3)	32	French (1)	3	Isabella	1	Poe
Catholic		French		Japan	1	Pope
Church (4)	4	Revolution	2	Jesuit (3)	6	priest
Catholicism	4	funeral	1	Jesuits	4	priests
Catholics	3	Galileo (1)	1	Jews (1)	4	Protestantism
cell	1	girl	1	judgment	1	punishment
century (1)	1	government	1	jury	2	question (1)
Cervantes	1	governments	1	kill	2	questioning (1)
Christian	1	grass (1)	1	law	3	questions (1)
church (1)	11	guillotine	4	lawyer	1	rack
Coligni	1	hanging	1	L.	2	rain
committee	1	H.	1	Louis XIV.	1	Reformation
court	5	heresy	1	low	1	religion (1)
cruel	1	heretic (1)	1	Loyola (1)	3	Renaissance
cruelty	5	history (5)	34	masonry	1	require
curiosity	2	Holland	1	martyrs	1	requisition
dark ages (1)	1	holy	1	M.	1	research
death	1	horrible	2	mediaeval	2	revolution
demand	1	horror	4	mediaevalism	2	Roman (1)
devilment	1	horrors	1	Mexico	2	Romanism
disposition	1	Hugenots	1	middle ages	3	Romanists
doctor	1	ideal	1	mind	1	Romans
Dominicans (1)	1	imposition	1	monk	3	Rome
early	1	Indian	1	monks	1	scaffold
education	1	indifference	1			

23. AMPHIBIOUS.

Individuality Frequency, 109.

Failure Frequency, 7.

alligator	(2)	14	crawling	1	geology	8	monster	2	small animal	1	
ambidextrous	10		creature	1	grass	1	mortal	1	snake	1	
ambiguous	2		crocodile	(2)	10	Greek	1	mud-puppy	1	species	1
amorphous	2		Darwin	1	hands	3	myself	1	story	(1) 1	
amphib	1		definition	1	herb	1	nautical	1	submarine	(1) 1	
amphibia	(2)	2	dextrous	2	herbivorous	1	natural habits	(1) 1	swamps	1	
amphipod	1		dimorphic	1	hippopotamus	(1) 9	Necturus	1	swim	1	
amphitheater	2		dioecious	1	historical	1	ocean	3	swimmer	(1) 2	
amplitude	1		dog	1	horse	1	physiology	2	swimming	5	
ancient	1		dossil	1	ibid	1	plants	1	swims	1	
animal	(3)	87	double	9	Ibsen	1	pollywog	(1) 2	tadpole	1	
animals	(1)	10	double life	1	Irishman	1	psychology	1	technical	1	
anthropology	1		doubtful	4	invertebrate	1	quadruped	1	teetotaler	1	
aquatic	(1)	1	duck	(2)	6	K.	1	race	1	toad	4
axolotl	1		duckbill	1	K.	1	recapitulation	(1) 1	toads	(1) 2	
bath	(1)	1	earth	1	land	(1) 11	reptile	(1) 19	T.	1	
batrachia	1		eat	1	land and water	4	reptiles	(1) 5	T.	1	
batrachian	(2)	4	eating	1	(1)		reptilia	(1) 1	truthful	1	
bear	1		elephant	1	leaf	1	rhinoceros	(1) 2	turtle	7	
beast	1		encyclopaedia	1	left	1	rocks	1	turtles	1	
beaver	3		English	1	legs	2	salamander	(2) 12	two	5	
biology	(2)	17	faults	1	lie	1	S.	1	understand	1	
bird	(1)	3	feet	2	life	2	scaled	1	vertebrate	3	
birds	1		fibre	1	liniment	1	science	2	walking	1	
bite	1		fish	(5) 67	lizard	(1)	sea	(1) 8	walrus	2	
blank	1		fishes	2	lobster	1	seal	7	water	(17) 206	
blue fish	1		fishy	2	mad	1	sea-lion	2	water-dog	(1) 1	
body	1		flappers	1	mammal	2	sea-turtles	(1) 1	water-loving	1	
both	6		fodder	1	mammals	1	shapeless	1	watery	2	
carnivorous	1		foot	1	man	1	ship	1	wet	2	
centipede	1		frog	(28) 189	many	1	shore	1	whale	(3) 26	
cetacean	1		frogs	(4) 18	marine	(1) 2	shores	1	whales	1	
chair	1		gastronemia	1	meat	1	sleep	1	worm	2	
Christian	1		geological	1	mermaid	1	slow	(1) 1	zoology	(2) 31	

24. DECIMAL.

Individuality Frequency, 58.

Failure Frequency, 0.

algebra	(1)	2	decimate	(1)	3	France	(1)	1	one-hundredth	2	
anecdote	1		decipher	1	French	(1)	3	(2)	stick	1	
arithmetic	(6)	85	denomination	1	geometry	1	one-tenth	2	subtract	1	
army	1		desecrate	1	Hindoo	1	".	1	subtraction	4	
banking	1		division	1	hundred	1	part	(2)	sum	1	
bills	1		divisions	1	hundredth	2	parts	2	system	(3) 20	
blackboard	1		dollar	3	integral	2	percent	4	teaching	1	
capital	1		dollars	1	interest	1	percentage	(1) 6	tease	1	
centimeter	2		dot	7	logarithm	1	period	(1) 20	ten	47	
circulating	1		duodecimal	2	mathematical	1	picture	(1) 1	tenth	26	
classification	(1)	2	eight-tenths	1	mathematics	(2) 12	place	(1) 4	tenths	9	
coinage	1		electric	1	measure	3	point	(13) 135	thousandth	1	
comma	2		equation	1	meter	(1)	position	1	two	1	
common	4		equivalent	1	metric	(1)	10	1	unit	1	
compound	1		figure	6	money	(1)	punctuation	1	verb	1	
concentration	(1)	1	figures	(1) 11	notation	(1)	4	revision	1	vulgar	1
contract	1		five-tenths	1	noun	(1)	5	school	2	vulgar fraction	1
day	1		fortunes	1	number	(10)	44	short	1	whole	(1) 2
Decameron	1		fraction	(38) 372	numbers	15	sentence	1	zero	(1) 6	
December	(1)	2	fractional	2	one	1	septem	1	small	1	
decimal point	1		fractions	(2) 37			statistics	1	zeroes	1	

25. HYDRAULIC.

Individuality Frequency, 56.

Failure Frequency, 1.

aqueduct	1	engineer	7	hydro-	1	mining	11	sanitary	1
canal	(1)	engineering	(3)	hydrolysis	1	P.	1	science	1
cement	2	engines	1	hydrostatic	(2)	physics	(4)	static	1
chemics	1	flow	1	hydrostatics	(1)	picture	1	steam	1
chemistry	3	force	7	hydrozoon	1	pipe	1	strength of water	1
civil	1	force pump	2	laboratory	(1)	piston	1	syringe	1
compression	1	gauge	(1)	land	1	plant	1	technology	1
conservation	1	gold	2	Leonardo		pneumatic	(1)	T.	(1)
C.	1	G.	1	da Vinci	1	power	(4)	turbine	1
cow	1	grade	1	lift	1	press	(13)	washing machine	1
crane	3	gravity	1	lifting	1	pressed bricks	2	washout	1
dam	1	hammer	1	lime	(1)	pressure	(9)	water	(38)
dynamic	1	H.	1	machine	7	pump	(5)	water-power	411
electric	2	heavy	1	machinery	6	pumping	1	water-pressure	3
elevator	(1)	hose	1	mechanics	(1)	pumps	2	weight	2
elevators	1	hydra	1	M.	1	ram	(11)	well	1
energy	1	hydrangea	1	mine	3	reservoir	1	Z.	1
engine	(1)	15							

26. OSMOSIS.

Individuality Frequency, 153.

Failure Frequency, 58.

absorption	(1)	5	cosmos	2	hardening	3	ox	1	soaking through	1
action	2	cosmosis	2	hormone	(1)	1	oxygen	(1)	soil-water	1
air	1	covering	1	H.	(1)	1	parchment	3	solidifying	1
A.	1	crystallize	(1)	1	hydrolysis	1	partition	(1)	solution	(4)
alpha privative	1	crystallloid	(1)	2	hydrostatics	1	pass	1	starch	1
anatomy	1	death	1	hypnosis	1	passage	6	stimulation	1	
ankylosis	1	dentistry	1	important	1	passing	3	stone	1	
apparatus	3	dialysis	12	integration	1	penetration	(1)	straw	1	
ascent	1	dialyzation	1	intestine	1	percolate	1	strong	1	
assimilation	2	dialyzer	1	Iowa	1	percolation	2	suction	4	
asthma	1	diapedesis	1	jar	1	permeability	3	sugar	(1)	
attraction	1	diaphragm	(2)	6	K.	1	permeating	1	surface tension	1
automatic	1	dictionary	1	laboratory	1	permeation	1	teacher	1	
bacteriology	1	dietetics	1	lameness	1	Pfeffer	(2)	tension	1	
B.	1	diffusion	(6)	28	leaf	1	physical	1	test-tube	1
between	1	digestion	2	leak	1	physical	2	text-book	1	
biology	14	doctor	1	leakage	2	chemistry	(1)	theosophy	1	
bladder	(1)	1	Durochet	1	leaves	2	physician	1	thermos	1
blood	(4)	42	earth	1	liquid	(1)	physics	(3)	thick	1
blood-vessel	1	effusion	1	liquids	(2)	6	physiological	1	thistle-tube	1
blotter	2	egg	28	lungs	(1)	2	physiology	18	through	1
blotting	1	eggs	3	lymph	1	plant	12	tissue	7	
bone	(1)	28	Egyptian	1	medicine	7	plants	(4)	tissues	1
bones	13	electricity	1	membrane	(20)	109	plasmolysis	(1)	transfer	2
bony	1	electrolysis	1	membranes	2	porcelain	1	transference	2	
book	(1)	1	endosmosis	(3)	8	porous	4	transformation	1	
botany	(1)	16	exchange	1	metabolism	3	pots	1	transfusion	6
breathing	(1)	3	exosmosis	(1)	2	molecules	(1)	transmission	2	
bulrushes	1	experiment	6	M.	1	pressing	(1)	transpiration	1	
cane sugar	1	eye	1	Moses	7	pressure	(9)	transudation	2	
capillary	(1)	4	eyes	1	most	1	pressures	(1)	transude	1
catalysis	1	fake	1	mouth	2	principle	1	tree	1	
cataphoresis	1	film	(1)	1	movement	1	process	7	trees	(1)
cell	(1)	7	filter	(1)	2	moving	1	professor	1	
cells	3	filtering	1	1	mystery	1	root	(1)	triangle	1
chamois skin	1	filtration	6	N.	1	2	2	tube	(1)	
change	19	flowing	1	nervous	1	salt	2	tuberculosis	1	
changing	1	fluid	2	nonsense	1	sap	1	tubes	1	
chemical	1	fluids	1	opal	1	science	12	turgor	1	
chemistry	(3)	46	food	1	O.	1	scientific	1	turn	1
chemosis	(1)	1	force	2	Oslerism	1	sclerosis	1	union	1
circulation	3	free	1	1	O.	1	seep	1	universe	1
clay	1	fruit	1	osmometer	(1)	2	semi-permeable	1	Van't Hoff	1
colloid	1	fusion	(1)	1	osmotic	1	separation	1	V.	1
colloids	1	gas	(1)	9	ossification	1	sifting	3	water	(2)
contraction	1	gases	(2)	10	osteopath	1	skin	11	wearing away	1
corpuscle	1	glass	1	1	O.	(1)	sleep	2	words	1
cosmopolitan	1	hair	1	out through	1	2	soak	1	yeast	1
					1	soaking	1	zoology	2	

27. PERCENTAGE.

Individuality Frequency, 102.

Failure Frequency, 1.

accounting	1	costs	1	fractions	19	one-tenth	1	rules	(1)	1
addition	5	death	1	gain	2	overhead	1	salary		2
alcohol	1	debts	1	goal	1	part	(3)	sale		1
algebra	1	decimal	(5)	43	grade	2	partial	1	school	4
apply	(1)	decimal point	1	grades	3	parts	1	science		1
arithmetic	(15)	196	decimals	6	grocery	1	per cent	(1)	seals	1
average	(1)	degree	1	gymnasium	(1)	1	percentage mark	1	share	2
bank	9	denominator	(1)	high	2	percental	1	sign	(2)	18
banking	(1)	10	difficult	2	hundred	(3)	49	percentile	3	six
banks	(1)	2	discount	4	hundreds	1	per cent sign	10	slate	1
base	3	dividend	(1)	1	hundredth	2	P.	1	small	1
baseball	2	division	3	hundredths	13	perquisite	1	statistics	(1)	11
basis	5	dollar	(1)	4	income	(1)	2	personage	1	stocks
batting	2	dollars	4	increase	1	personality	1	subtract		1
bond	1	dollars and		insurance	(1)	3	picture	1	sum	2
bonds	2	cents	(1)	1	interest	(12)	77	plant	1	table
book	1	efficiency	2	interval	2	plus	1	tables	(1)	1
business	(1)	9	error	(1)	5	investment	1	taxes		1
by the hundred	1	errors	1	low	1	point	1	teaching		2
calculation	3	examination	1	mark	(1)	7	portion	2	ten	7
cases	1	example	1	marks	2	Portugal	1	ten per cent		2
cash	1	examples	1	mathematics	(2)	17	principal	(1)	test	1
census	1	expression	1	mercantile	1	problems	2	thirty-four		1
character	1	fail	1	monachal	1	profit	4	times		1
charts	1	failures	1	money	(4)	40	proportion	10	tithing	1
class	1	fifty	(1)	1	multiplication	2	purchase	1	total	2
classification	1	figure	(1)	12	nitrogen	1	quantity	2	twenty	1
column	1	figures	(2)	15	no	1	rank	1	two	1
column of figures	(1)	1	finances	1	normal	(1)	1	rate	(2)	11
commission	1	five	2	notes	2	ratio	(2)	8	value	1
composition	(3)	10	formula	1	nouns	1	reduction	1	verb	2
compound	1	four	1	number	(3)	20	regents	1	vitality	1
computation	2	fraction	(8)	72	numbers	(2)	27	relation	(1)	whole
constituents	1	fractional	1	nutrition	1	relative	1	x over one		1
contest	1	fractional part	1	of	1	respiration	1	hundred		1
correct	2			one hundred	(2)	12	rhythm	(1)	zero	(1)

28. CEREBELLUM.

Individuality Frequency, 53.

Failure Frequency, 2.

analysis	1	convolutions	(1)	1	hair	1	motor-nucleus	1	S.	1
anatomy	(2)	9	coordination	1	head	(4)	44	(1)	spinal	2
ante bellum	1	cortex	1	hemispheres	1	neck	1	spinal cord	(1)	1
backbone	1	cranium	3	hindbrain	(1)	3	newspaper	1	spine	1
balance	1	dream	1	involuntary	1	pain	1	Syracuse		1
biology	1	drug	1	irritability	(1)	1	physiology	14	term	1
body	2	drunk	1	man	(1)	2	picture	(1)	text book	1
brain	(63)	671	earthworm	1	medicine	1	pigeon	1	thought	2
brains	(3)	13	equilibrium	(1)	2	medulla	(1)	11	pons	2
brother	1	flower	1	medulla	position	1	position	1	tired	1
cauliflower	1	folds	1	oblongata	1	psychology	13	tract		1
cerebral	3	fossae	1	meningitis	1	rabies	2	ventricle		1
cerebrum	(16)	127	ganglion	1	mentality	1	sensation	1	walnut-shaped	1
cherub	1	G.	1	model	1	skull	(1)	war	(1)	8
circingle	1	Golgi	1	motor	1	small	6	white		1
coating	1	gray	3				1	zoology		1

29. FRACTIONS.
Individuality Frequency, 91.
Failure Frequency, 3.

a/b	1	decimal (9)	59	fractions	1	numerator (2)	14	several	1
abominations	1	decimals (13)	84	fractious	1	numerators	1	S.	1
addition	8	denomination	1	fracture	5	of	1	simple	1
additions	2	denominator (1)	10	fractures	1	one-half (2)	4	six	2
algebra	7	denominators	1	Grammar	1	one-quarter	2	small	1
algebraic	1	different	1	G.	1	one-third (1)	1	split	1
arithmetic (24)	267	difficulties (1)	2	half	16	paper	2	stamp	1
banking (1)	1	difficulty (1)	5	halves	2	part (3)	33	strokes	1
before (1)	1	diffraction	1	improper (1)	3	partial	2	study	1
bone	1	dislike	1	inch	1	particles	3	subtraction	1
bones (1)	4	distillates	1	integer	3	partition	1	sums	4
book	1	distillation	2	integers (1)	9	parts (7)	54	symbol	1
boy	1	divide (1)	3	integral	4	per cent	1	T.	1
blackboard	2	divided	2	integrals	1	percentage	18	teacher	1
break	1	division (3)	19	interest	1	percentages	1	teaching	1
breakage (1)	1	divisions	2	Jews	1	pieces	2	ten	1
breaking	3	dollar	1	line (1)	8	picture (1)	1	tenth	1
breaks	2	E.	1	lines	1	portion	1	three-fourths	6
broken	4	equations	1	mathematics (2)	24	portions	3	three quarters	1
calculation (2)	4	example	1	medicine	1	problem	1	trouble	1
cents (1)	1	expectancy	1	misleading	1	problems	2	two	4
change	1	exponent	1	mixed	1	proper	1	two-thirds	4
character	1	faction	1	money	2	proportion	1	units	2
child	1	factors	1	multiplication	5	quotient (1)	3	vulgar (1)	5
children	1	figure	3	multiplier	2	ratio	2	whole	4
class	1	figures (1)	23	multiplying	1	rational (1)	2	whole number (1)	3
common (2)	19	figuring	1	nine-tenths	1	ratios	1	wholes	1
complex	1	five	1	nouns	1	reflection	1	words	1
compound	4	four	1	number (5)	31	room	1	work	3
computation	1	fourth (1)	1	numbers (5)	55	school	14	Y.	1
computations	1	fraction	1	numerals	1	series	1	youth	1

30. TITRATION.
Individuality Frequency, 164.
Failure Frequency, (3) 254.

abstract	1	color (2)	8	food	2	mortar	3	scratching	1
accuracy (1)	1	concentration	3	force	1	motion	2	screen	1
acid	13	copper	1	four	2	music	1	sedimentation	1
acidity	2	corsets	1	friction	2	naturalization	1	separation	4
acids	2	crushing	1	funnel	1	neutralization	3	serum	1
action	1	cyclone	1	geology	4	nitrate	2	shaking	2
adding	1	decinormal (1)	1	glass (1)	1	nitration	1	simmer (1)	1
addition	1	dehydrates	1	gravitation	1	nitrogen	1	solids	1
agar	1	dentition	1	Grecian	1	normality	1	solution (1)	7
alkali	1	derivation	1	Greek	1	nutrition	3	spear	1
alkalinity	1	determination	3	grinding (1)	3	obscure	1	stagnation	1
amusement	1	dictionary (1)	3	grind up	1	permanganate	3	stirring	1
analysis (4)	22	dietitian	1	gyration	1	pestle	1	stirring rod (1)	1
antipodes	1	difficult	1	Harrison	1	pharmacy	1	stock	1
apparatus	2	difficulty	1	head	1	phenolphthalein	9	stretch	1
arbitration	1	digestion	1	health	1	(1)	7	striation	1
attrition	2	dilution (1)	1	icicle	1	physics	7	subtraction	1
bacteriology	1	disaster	1	ignorance	2	physiology (1)	3	surgery	2
baryta water	1	dislike	1	incomprehensible	1	pieces (1)	1	tank	1
base	1	distil	1	indicator	7	pill	1	technical	1
beaker	4	distillation	1	infiltration	1	pills	1	teeth	1
biology	3	division	3	infusion	2	pink	2	term	1
blood	1	dripping	4	ippecac	1	pipette	1	test	1
book	1	drop	3	iron	2	pounding (1)	1	testing (1)	2
botany	1	dropping (1)	1	laboratory (3)	16	pour	1	tetanus	2
bottle	1	drops (1)	4	Latin	1	pouring (2)	2	tetrad	1
brain	1	drugs	2	laughter	1	powder	2	tetrahedron (1)	1
Bunsen	1	drug store	1	leaves	1	precipitate (1)	1	three	5
burette (8)	57	drying	1	liquid (1)	1	precipitation	2	tiara	1
calcium	1	dyadic	1	liquids (1)	2	problem	1	tide	1
carbonate	1	ebullition (1)	1	liquid solution	1	process	3	tight	8
calibration	1	end-point	1	(1)	1	proportions (1)	1	tighten	2
calorimeter	1	energy	2	litmus (1)	3	pulverization	1	tightening	1
chemical (1)	5	enigma	1	maze	1	quantitative (1)	1	tiles	1
chemical	1	estimation (1)	1	measure	2	quantitative	1	tincture	1
laboratory (1)	1	exhortation	1	measurement (2)	3	analysis	1	tintillation	1
chemicals (1)	1	experiment	2	measuring	3	quantity	1	tintinabulation	3
chemist	1	extraction	1	media	1	reaction (1)	1	(1)	1
chemistry (25)	151	filter (6)	14	median	1	red	2	tintulate	1
chemists	1	filtering	3	medicine	4	repetition	1	tirade	3
chew (1)	1	filtration (3)	18	methyl orange	2	rope	1	titan	1
churning	1	finely	1	mixing	4	rubbing (1)	9	titanic	15
circle	1	flask	1	mixture (1)	1	science	4	titanotherium	1
cock	1	fluid	(2)	2 mixtures	1	scintillation	1	T.	1

Titian	3	Titus	2	trigonometry	1	typhoid	1	wasting	1
titillation	2	traction	1	trio	1	tyrant	1	water	(1)
titivate	1	trees	1	trite	2	urinalysis	1	water analysis	1
title	2	tremble	1	tritonic	1	vessel	1	wearing	3
titrate	2	trembling	1	triturate	(1)	3 vibration	(1)	wearing away	2
titric acid	1	triad	1	trituration	7	volume	(1)	wiggle	1
titular	3	triangle	1	typewriter	(1)	volumetric	(1)	word	4
titulate	1	trichina	1	typewriting	7	Wassermann	1	work	1

31. CARBOHYDRATE.
Individuality Frequency, 103.

Failure Frequency, 1.

acetylene	2	chickens	1	fire	1	meat	(1)	1	potatoes	4
acid	3	chloride	1	Fischer	1	medicine	4	prescription	1	
acids	1	CHO	(1)	2 fluid	1	metabolism	(1)	prestolite	1	
albumen	1	CHON	1	food	(9)	89 methane	1	proteid	20	
alcohol	(1)	coal	(1)	5 foods	(1)	6 methylene	1	proteids	3	
alimentary canal	1	combination	1	foodstuffs	1	mineral	1	protein	(1) 16	
analysis	1	comet	1	formula	(1)	1 misnomer	1	protoplasm	1	
anhydrous	1	compound	(2)	7 fruit	1	natural history	1	raffinose	1	
antiseptic	1	cooking	1	gas	6	nitrogen	(2)	ration	1	
Battle Creek	1	copper	1	gases	1	nitrogenous	1	salt	2	
beans	1	corundum	(1)	1 glucose	1	not fat	1	salts	1	
benzene	1	dextrin	1	glycerin	1	nourishment	1	sewage	1	
biology	(1)	dextrose	2	G.	1	nutrition	(2)	smell	1	
bitumen	1	diamonds	1	grease	1	organic	(1)	soda	1	
blood	1	diet	1	H.	1	organic chemistry	2	solids	1	
body	1	dietetics	1	heat	2	organics	1	S.	1	
botany	2	diets	1	H.	1	organism	1	starch	(11) 66	
bottle	1	digestion	2	H ₂ O	1	oxide	1	starches	3	
bread	2	dioxide	1	hydrocarbon	(4)	14 oxygen	8	substance	2	
bubbles	1	disinfectant	1	hydrocarbons	4	paraffins	1	sugar	(33) 170	
cake	1	doctor	1	hydrochloric	1	pentosin	1	sugars	(2) 17	
candy	1	domestic science	1	hydrogen	1	peroxide	1	sugary	1	
capillary	1	drug	2	hyposulphite	1	photo-synthesis	2	sulphur	2	
carbolic	(1)	drugs	1	ignorance	1	(1)	1	sulphuric acid	1	
carbon	(5)	egg	3	inorganic	1	physics	9	symbol	1	
carbonate	3	electric	1	iron	1	physiological	1	T.	1	
carbon dioxide	2	electric light	1	K.	1	chemistry	1	teaching	(1) 1	
carbonic	1	elements	1	laboratory	3	physiology	10	T.	1	
carbons	1	emulsion	1	lime	1	plant	2	water	(1) 22	
CH	3	fat	(4)	38 line	1	plants	(1)	W.	1	
chemical	(1)	fats	18	liquid	1	potato	2	zoology	1	
chemistry	(9)	figures	1	man	1					

32. DUODENUM.
Individuality Frequency, 91.

Failure Frequency, (1) 72.

abdomen	4	cloth	1	eye	1	membrane	2	septicaemia	1
affection	1	colon	8	feelers	1	mesentery	1	skeleton	1
alimentary canal	2	constipation	1	first	1	metal	1	skin	8
alimentation	1	cord	1	food	1	millions	1	sphincter	(1) 1
anatomy	(7)	decimal	7	fractions	1	misbelieving	1	spinal cord	(1) 1
animal	2	demon	1	gastric	1	motion	1	spleen	(1) 3
anus	(1)	deny	1	geometry	1	music	2	S.	1
appendicitis	4	diaphragm	1	gods	1	number	4	stomach	(9) 85
appendix	(1)	dictionary	1	Greek	1	numbers	5	structure	1
arch	(1)	die	1	gut	3	octavo	1	sweetbread	1
arithmetic	3	digestion	(3)	19 head	3	oesophagus	(1)	swelling	1
assimilation	(1)	digestive tract	1	history	3	operation	(1)	systems	1
autopsy	1	doctor	2	hospital	1	organ	1	teacher	1
belly	(1)	doctors	(1)	1 human body	1	organism	2	ten	3
bend	1	dominoes	1	ileum	(2)	13 pancreas	2	thousand	1
bile	(1)	D.	1	ill	1	peritoneum	1	throat	1
binding	1	double	4	insides	2	peritonitis	1	tissue	1
biology	4	dual	(1)	1 internal	2	physical	1	tube	1
body	(2)	dualism	1	1 intestinal	(1)	2 physiology	(8)	Turkish	1
bone	1	duei	2	2 intestine	(64)	245 picture	(1)	twelve	(2) 13
book	6	duenna	1	2 intestines	(1)	25 pituitary body	1	twelve inches	(1) 1
botany	2	D.	1	1 Italy	1	polyhedron	1	twenty	1
bowel	(1)	D.	1	1 jejunum	(1)	18 portion	1	two	(1) 47
bowels	(2)	duodecim	1	1 Latin	29	psychology	1	two-ness	1
brain	(1)	duodecimal	(2)	28 lecture	1	1 puzzle	1	ulcer	(2) 7
bud	1	duo-decimals	2	1 liver	2	1 pylorus	1	Upper intestine	1
caecum	1	duojeum	1	1 man	(1)	2 rectum	7	(1)	
canal	1	dwelling	1	1 manikin	1	1 rhythm	(1)	volume	1
caravan	(1)	D.	1	1 marriage	1	1 ribs	(1)	wonder	1
cerebellum	1	element	1	1 mathematics	3	1 Rome	1	word	1
chemistry	1	expression	1	1 medicine	2	1 sausage	1	years	1
		extirpation	1	1 medulla	(1)	1 science	4	zoology	2

33. COSECANT.

Individuality Frequency, 67.

Failure Frequency, (4) 44.

abbreviation	1	cohesion	1	division	1	line	(1)	10	sea	1
algebra	(1)	20	comparison	1	drawing	1	lines	1	secant	(10)
analytic	3	conic	1	E.	1	logarithm	1	sector	1	
analytics	4	consecutive	1	equal	1	logarithms	(1)	2	segment	1
angle	(3)	10	consequence	1	fibres	1	mathematics	66	sequence	2
angles	1	consequent	1	follow	1		(10)		sextant	1
antecedent	1	contrary	1	following	3	measure	1	sine	(12)	
arc	2	coordinate	1	freshmen	1	M.	1	song	1	
arithmetic	(1)	16	cosine	(5)	36	function	(1)	2	navigation	1
astronomy	2	cosines	1	geology	1	numbers	2	square	1	
awful	1	cossack	1	geometrical	2	P.	1	tangent	(8)	
bisect	1	cosy	1	geometry	(7)	79	parenthesis	1	text book	68
book	2	cotangent	(2)	grammar	3	physics	2	thought	1	
botanical	1	C.	1	great	1	problem	1	together	3	
calculus	3	curve	2	happening	1	psychology	1	triangue	(1)	
charts	1	cut	2	harvesting	1	trigonometry	1	trigonometry	369	
chord	1	cutting	2	hypotenuse	(1)	radical	1		(31)	
circle	5	D.	1	infinitive	1	radius	1	truth	1	
coagulation	1	diagram	1	Japanese	1	ratio	1	university	1	
coalesce	1	differential	1	J.	1	room	1	Warren	1	
coast	1	digestive	1	Latin	2	schoolroom	(1)	1	with	2
coefficient	7					science	2	word		1

34. BIOLOGY.

Individuality Frequency, 146.

Failure Frequency, 3.

35. ODYSSEY.
Individuality Frequency, 51.

Failure Frequency, 1.

Achilles	1	geography	2	literature	(2)	14	period	1	stars	1
adventure	1	G.	1	model	1	pictures	1	statue	1	
Aeneid	4	Greece	(1)	17	M.	1	pleasure	1	story	1
analysis	1	Greek	(11)	119	myth	2	poem	(2)	study	1
ancient	1	Greek history	1	mythology	1	poetry	(1)	10	surge	(1)
audacity	1	Greeks	3	Nausicaa	1	Pope	2	teaching	2	
boldness	1	Helen	1	oddity	1	pyramid	1	translation	1	
book	(1)	history	(1)	3	ode	1	recitation	1	travel	(1)
classics	(2)	Homer	(52)	455	Odysseus	(1)	6	R.	Troy	1
college	1	Horace	(1)	2	oracular	1	Roman	2	Ulysses	(4)
dictionary	1	humiliation	1	P.	1	school	1	Virgil	7	
eccentric	1	Iliad	(18)	197	P.	1	sea	1	wandering	(1)
English	2	L.	1	peculiar	1	ship	1	wanderings	1	
epic	2	language	1	peculiarity	1	shore	1	wars	1	
fable	1	Latin	17	Penelope	1	sirens	1			
flight	1									

36. VERTEBRATE.
Individuality Frequency, 68.

Failure Frequency, 0.

amphibian	1	chimpanzee	1	fossil	2	mammals	5	skeletons	1		
amphibious	1	chorda	1	frog	4	man	(3)	skull	2		
amphioxus	2	chordate	(1)	3	geology	(1)	2	matter	4		
anatomy	(6)	26	class	(1)	1	giraffe	1	medicine	1		
animal	(27)	204	classification	(1)	1	Haeckel	2	mollusc	1		
animals	(3)	27	coelenterata	1	1	H.	1	monkey	1		
anthology	1	column	8	higher animal	1	morphology	1	specimen	(1)		
anthropology	1	conundrum	1	higher animals	1	museum	1	spinal	(3)		
ape	1	cord	1	horse	8	non-vertebrate	2	spinal column	4		
articulate	1	cow	4	Huxley	1	notochord	2	spinal cord	1		
back	(2)	cripple	1	invertebrate	104	ornithology	1	spine	(2)		
backbone	(15)	103	crooked	1	(15)	O.	1	spineless	1		
bear	1	Darwin	1	invertebrates	1	palaeontologist	1	spines	2		
beast	1	dinosaur	1	jelly	1	paleontology	2	structure	3		
B.	1	dog	3	jointed	1	P.	1	tail	1		
biology	(1)	earthworm	1	joints	1	physiology	12	vertebra	(1)		
bird	1	E.	1	kingdom	(1)	psychology	1	vertebrae	4		
birds	1	elephant	2	laboratory	1	quadruped	1	vertigo	1		
body	3	erect	2	legs	1	reptile	1	whale	1		
bone	(2)	43	evolution	4	life	2	rib	1	W.	1	
bones	(1)	25	fertile	1	lizard	1	science	1	Woods Hole	(1)	
brain	7	fish	(2)	14	mammal	(1)	31	segment	1	worm	1
cat	(1)	force	1	mammalia	1	skeleton	(3)	zoo	1		
cervical	1							zoology	(4)	43	

37. GRAVIMETRIC.
Individuality Frequency, 101.

Failure Frequency, 53.

analysis	(12)	52	dictionary	3	geophysical	1	lines	1	philology	1
analytic	1	difficulty	1	glass	(1)	liquid	(1)	phonograph	1	
analytical	1	down	1	gram	1	machine	(1)	physics	(6)	
anthropometric	1	draw	1	graph	2	mathematics	(1)	physiography	1	
apparatus	1	drawing	(1)	graphic	1	measure	(4)	pictorial	1	
apple	1	dynamics	1	graphophone	4	measured	2	picture	1	
arithmetic	3	earth	7	graphs	(1)	measurement	34	platinum	1	
arithmetical	1	ebullition	(1)	grave	(1)	(3)		plumb	1	
attraction	3	electricity	1	gravel	1	measurements	5	pressure	2	
A.	1	elevator	1	graven	1	measure		procedure	1	
avoirdupois	1	energy	1	gravimeter	1	of weight	2	process	2	
balance	(4)	16	engineering	2	gravinometer	1	measuring	10	psychology	1
balances	1	esoteric	1	gravitate	3	mechanic	1	psychometric	(1)	
ball	1	fall	2	gravitation	(4)	medical	1	pycnometer	1	
barometer	1	falling	1	gravity	(1)	mensuration	(1)	pull	2	
biometric	1	falling body	1	gravy	94	metals	1	quantitative	2	
burette	(1)	figuration	1	heavy	(5)	meter	8	rule	1	
by weight	1	flask	2	hydraulic	1	meters	1	ruler	2	
calcium oxide	1	fluid	(1)	hydrolysis	1	method	(3)	scale	(1)	
centrifugal	1	force	6	hydrometer	2	metric	10	scales	(2)	
charge	1	France	(1)	instrument	4	metrical	1	school	1	
chemistry	(5)	35	French	1	instruments	1	metric system	8	science	15
circle	1	function	1	isomeric	1	metrocentric	1	separation	1	
compass	(1)	g.	1	isometric	3	metronome	1	solution	1	
composition	1	galvanometer	4	laboratory	2	mining	1	specific	2	
declension	1	geocentric	1	land	1	monument	1	specific gravity	2	
determination	(1)	geography	3	Latin	2	Newton	(1)	spring balance	1	
determinations	1	geology	(1)	2	law	1	number	1	star	1
diagrams	1	geometric	4	lead	1	optometry	1	stoichiometric	1	
diametric	2	geometry	6	line	1	pedestrian	1	sure	1	

surveying	1	technology	1	trigonometric	1	volumetric	(7)	42	weight	(12)	103	
system	(1)	24	test	(1)	3	tropism	(2)	2	water	1	weight measure	3
table	2	tests		1	unit		1	weigh	2	weights	(2)	7
tape measure	1	titration		4	volume		1	weighing	(8)	14		

38. FEDERAL.

		Failure Frequency, 1.				
aid	1	commonwealth	1	governmental	3	municipal
Alexander		Confederacy	2	governor	1	nation
Hamilton	1	confederate (9)	43	grant	(1)	national (2)
America	1	confederates	1	Hamilton	2	national
American	1	confederation	1	hat	1	government
annex	1	congress (2)	2	history	5	navy
anti-federal		constitution (7)	47	Huerta	1	New York
army	19	constitutional (1)	6	inquiry	1	north
assembly	1	constitutionalist	2	insurance	1	northern
athletic	1	constitutionalists	1	insurgent	1	obligation
Australia	1	continental	1	interstate	1	papers
bank	2	control (1)	3	commerce	1	Philadelphia
baseball	(2)	council	1	investigation	1	politics (2)
battle	1	country	8	Jefferson (1)	2	postal
blue-coat	1	court (1)	9	judge	5	prison
board	(1)	courts (2)	5	jurisdiction	1	rational
book	1	delivery	1	law (1)	15	rebel (1)
building	2	democratic	2	laws (1)	1	rebels
bureau	1	district	2	league	13	republic
capital	2	dominion	1	Lee	1	republican (1)
chief	1	express	10	liberal	2	reserve
civics	1	federation	1	Madison	1	reserve act
civil	5	ferocious	1	Mexican	1	revolution
Civil War	3	feudal	1	Mexicans	1	soldier (2)
colonial	1	flag	1	Mexico	10	soldiers (1)
combine	1	fusion	1	military	1	south
combined	(1)	government	353	monarchy	1	southern
commission	1		(33)	money	3	

39. MORPHOLOGY. Individuality Frequency, 130.

Failure Frequency, (1) 31.							
ablant	1	chemistry (1)	3	fern (1)	1	logic	2
abnormal	1	classification	3	field	1	logos	1
abnormalism	1	coast-line	1	fitness	1	man	6
algae	1	cocaine	1	flower	3	M.	1
A.	1	cocoon	1	flowers (1)	2	medical	1
amorphous	3	college	1	form (59)	131	medicine (1)	18
analysis	2	comparative	1	forms (2)	10	metamorphosis	3
anatomy (9)	31	constitution	1	form study	1	microscope	5
ancient	1	corpse (1)	1	fossils	1	microscopic	1
angiosperma	1	C.	1	function (1)	2	minute	1
animal (1)	9	crystal	1	fungi	1	mollusc	1
animals (1)	5	crystals (1)	1	geology	4	morgue (1)	1
anthology	1	cytology	1	Greek	2	Mormon	1
anthropology	10	dead	4	growing	1	morphe	1
anthropomorphic	1	dead body	1	growth	1	Morpheus	8
anthropomorphism		death	48	gymnosperms	1	morphine (3)	31
	2	death rate	1	Haeckel	1	morphosis	1
arena	1	degenerate	1	head	1	mortality	1
bacteria	3	derivation	2	health	1	mortification	1
bacteriology	3	development	4	heart	1	moth	1
biological	1	dictionary	1	H.	1	mouldy	1
biology (3)	44	disease	4	hermaphrodite	1	mythology	2
blood (1)	2	doctor	1	histology	14	N.	1
bodies (1)	2	doctors	1	history	1	origin	1
body	5	doxology	1	homology	1	ornithology	1
bone	2	drugs	1	hospital	2	ossify	1
bones	4	dying	1	human	1	paleontology (1)	2
book (1)	5	ease	1	H.	1	parts	1
botany (6)	33	ecology (1)	2	Huxley	1	pathology	6
brain	1	embryo	1	hygiene	1	person	1
bugs	1	embryology (2)	10	illustrations	1	philosophy	1
butterflies	1	endosperms	1	infancy	1	physics	1
butterfly	3	eternity	1	insect	1	physiology (6)	27
Canadian	1	ethnology	1	insects	2	plant (1)	26
cat	2	etiology	1	J.	1	plants (5)	27
catalogue	1	etymology	1	knowledge	1	poison	1
cell	1	evolution (1)	2	laboratory (1)	2	psychology	1
cells	1	exchange	1	language	1	roots	1
change	35	experimental	1	leaf	1	science (4)	59
changes	3	fashion (1)	1	life	7	sex	1
characteristics	2					zoology	(2) 20

43. METEOR.

Individuality Frequency, 100.

Failure Frequency, 0.

aerolite	1	discussion	1	Harpswich	1	mineral	(1)	2	shooting	3
air	2	D.	1	heat	1	mistake	1	1	shotting	(1) 4
airship	1	earth	1	heaven	(1) 3	moon	1	1	shooting	star (3) 5
Alaska	1	elements	1	heavenly	1	motion	2	2	shooting	stars 1
American		etching	1	heavenly body	1	museum	(1)	8	shower	(1) 1
Museum	1	explosion	1	heavens	(1) 13	Nebraska	1	1	sky	(10) 112
arctic	1	fall	(2) 9	Helmholtz	1	nebula	1	1	space	1
asteroid	4	falling	14	Hohenzollern	1	newspaper	1	1	sparks	1
astrology	1	falling star	3	hot	1	nickel	3	3	spectrum	1
astronomy (10)	125	famous	1	image	(1) 1	object	1	1	speed	1
bacteriology	1	fast	1	Iowa	1	Peary	1	1	star	(29) 275
ball	(1) 1	fear	1	iron	(6) 31	Perseids	1	1	stars	(1) 31
ball of fire	1	fell	1	K.	(1) 1	phenomenon	1	1	stella	1
black	1	fiery	1	laboratory	1	picture	1	1	stone	(2) 16
blood	1	fire	6	lava	1	planet	14	2	streak	2
body	(1) 5	fire ball	1	light	(2) 32	planetesimal	1	1	sun	1
bright	(1) 3	flame	2	lightning	1		(1)	1	surprise	(1) 1
brightness	2	flare	(1) 1	local	1	planets	3	3	swiftness	1
brilliancy	1	flash	11	mass	1	poem	1	1	tail	2
brilliant	1	flashing body	1	measure	2	poetry	1	1	task	1
Brooklyn	1	flight	(1) 3	mellifluous	1	quick	1	1	telegraphy	1
career	2	fly	1	message	1	rapid	1	1	telescope	1
celestial	1	flying	2	metal	(1) 6	road	1	1	trail	(1) 2
cheese	1	fragment	1	meteorite	(5) 15	rock	(1) 7	2	train	(1) 2
cloud	1	geologic	1	meteorites	1	rocket	2	2	water	3
comet	(8) 89	geology	7	meteorlogical	1	rush	1	1	wave	1
comets	1	Greek	1	meteorology	3	satellite	2	2	weather	1
cosmic	2	Halley	1	meter	(1) 1	Saturn	(1) 1	1	weight	1
destruction	1	Halley's	2	middle	1	science	1	1	Wilhelm	1
discovery	1	Halley's comet	1	Milton	1	ship	(1) 1	1	world	1
								2	yacht	2

44. MOMENTUM.

Individuality Frequency, 64.

Failure Frequency, 0.

acceleration	8	fall	2	irresistibility	(2) 1	movement	(4) 36	roll	1	
accident	1	falling	1	I. W.	1	moving	2	rolling	1	
action	3	fast	1	kinetic		m. v.	(1)	6	rush	2
arithmetic	1	flying	1	energy	(2) 2	Newton	3	rushing	1	
automobile	3	force	(17) 223	law	1	object	1	science	1	
balance	1	formula	2	laziness	1	ocean	2	ship	(1) 1	
ball	(3) 6	forward	(1) 1	leg	1	pendulum	2	shoot	1	
body	6	go	1	locomotive	1	physics	(8) 104	sliding	1	
bullet	1	going	(1) 4	machine	1	plane	1	space	2	
bump	1	gravimetric	1	mass	(5) 38	power	15	speed	(9) 149	
cannon	1	gravitation	1	matter	1	present	1	sphere	1	
cannon ball	2	gravity	(4) 13	mechanics	(2) 11	pressure	2	start	2	
car	2	heavy	3	mesentery	1	prodigious	1	still	1	
cause	1	hurry	1	minimum	1	projectile	1	stone	1	
center	1	immobility	1	minute	1	push	(2) 13	strength	1	
circumference	1	impact	(2) 4	moment	4	quick	2	swift	5	
down	1	impetus	8	momentous	(1) 2	quickness	1	time	1	
drop	1	impulse	(1) 6	momentum	1	rapid	1	train	20	
eccentric	1	increased	1	morality	1	rapidity	4	trolley	1	
energy	(3) 10	inertia	(7) 43	motility	1	rate	1	truck	1	
engine	(1) 7	initiative	1	motion	(9) 76	resistance	(1) 2	velocity	(5) 36	
equation	1	irresistible	1	mountain	1	rest	(1) 1	vis viva	(2) 2	
factor	1							weight	(7) 37	

45. CORNWALLIS.

Individuality Frequency, 70.

Failure Frequency, 3.

admiral	(1)	1	country	1	history	(2)	36	palisades	1	soldiers	1	
ambassador	(1)	1	Cromwell	1	Hudson	(1)	4	peace	(1)	statesman	1	
America	2	defeat	11	Hudson	River	1	Peekskill	1	surrender	(7)	49	
American	1	defeated	1	India	(1)	2	Pennsylvania	1	surrendered	1		
American history	1	duke	(2)	6	Indians	1	picture	3	sword	4		
A.	1	Edinburgh	1	Ireland	1	2	pictures	1	Syracuse	1		
army	3	E.	1	J.	1	1	place	1	T.	1		
battle	(4)	57	England	(2)	45	Jackson	1	plains	1	teacher	1	
battles	1	English	(1)	36	Jamestown	1	Quebec	1	Texas	1		
Boston	2	Englishman	2	J.	1	1	rebellion	1	threatening	(1)	1	
Brandywine	1	fight	4	J.	1	1	red	2	Ticonderoga	1		
British	(1)	18	fighter	1	L.	1	1	red-coat	1	troops	1	
brook	1	fighting	1	Lafayette	3	revolution	(9)	80	uniform	1		
Burgoyne	(1)	7	French	1	leader	1	1	revolutionary	3	valley	2	
charge	1	general	(11)	130	lodge	3	Revolutionary		Valley Forge	2		
Civil War	2	generals	1	Long Island	1	War	3	Wales	1			
coal	1	geography	(1)	1	lord	(7)	41	Richmond	1	war	(1)	25
Columbus	1	Georgetown	(1)	2	man	(3)	19	Saint Nicholas	1	Washington	(4)	75
commander	1	George	New Jersey	(1)	1	Saratoga	4	Waterloo	3			
C.	1	Washington	3	New York	3	Scotland	1	West	(5)	35		
corn	1	giant	1	night	1	1	siege	(1)	1	York	(1)	7
corn-cob	1	government	(1)	2	Oregon	(1)	1	snow	1	Yorktown	(25)	167
cornucopia	1	Great Britain	1	painting	1	1	soldier	11	Yorktown			
Cornwall	(2)	7						Heights	1			

46. PROTOZOON.

Individuality Frequency, 121.

Failure Frequency, 14.

acinetae	1	changing	1	God	1	movement	(1)	1	protozooid	1	
age	6	chaos	1	G.	1	nuclein	1	psychology	1		
algae	1	chart	1	green	1	O.	1	pulp	1		
amoeba	(27)	187	chemistry	3	group	1	one cell	2	rock	1	
amoeban	1	cilia	1	Haeckel	2	organism	6	science	12		
ameboid	1	class	(1)	2	H.	1	organisms	1	S.	1	
amphibian	1	college	1	high school	1	ovum	1	sea	(1)	4	
anatomy	1	creation	1	hydra	(1)	2	paleontology	2	sea shore	1	
ancient	2	creature	1	hydrate	1	1	paramoecium	16	seed	1	
ancient animal	1	crustacean	2	hydrozoon	1	(6)		semen	1		
animal	(14)	107	Darwin	(1)	2	hygiene	1	sewage	1		
animalcule	(2)	10	deep sea	1	1	infection	1	simple	(1)	3	
animal parasite	1	D.	1	infusion	(1)	1	period	2	simplicity	1	
animals	3	diffugia	1	infusoria	5	periods	1	single	2		
antiquity	1	digestion	1	insect	1	phyla	1	slime	1		
anything	(1)	1	disease	(1)	4	invertebrate	1	small	(1)	7	
archaic	1	diseases	1	1	jelly	3	physiology	9	smallness	1	
atomic	1	early	2	J.	(2)	2	P.	1	S.	1	
bacteria	(2)	7	E.	1	lakes	1	plant	7	specimen	1	
bacteriology	6	elemental	1	Latin	1	plasm	1	sperm	1		
beginning	1	elementary	1	Leishman-		prevital	1	spermatozoon	1		
biology	(4)	135	embryology	1	Donovan	1	primal	1	sponge	1	
bioplasm	1	entozoon	1	life	(3)	36	primitive	(3)	sporozoon	1	
blood	1	eras	1	lifeless	1	prodigy	1	stone	1		
blue	1	Euglena	1	low	1	proletariat	1	S.	1		
body	1	evolution	3	lowest	1	protagonist	1	study	1		
botany	4	fertilization	1	mammal	1	protegulum	1	stuff	1		
B.	1	first	10	marine	(1)	1	proteid	2	text book	1	
bryophyte	1	first life	1	metazoa	2	protein	1	unicellular	(6)	14	
bryozoon	1	flagellate	4	metazoon	(4)	18	proteus	1	Urtiere	1	
bug	(1)	9	fluid	1	microorganism	5	protista	2	vagina	1	
bugs	2	food	6	microscope	5	protophyte	1	vegetable	1		
B.	1	form	1	microscopic	(1)	3	protoplasm	(3)	water	11	
C.	(1)	4	foraminifera	1	minute	2	protoplasmic	17	wiggle	1	
carbohydrates	1	geology	20	mollusc	1	1	protose	1	zone	3	
carbon	1	germ	3	motion	1	protozoa	1	1	zoology	(8)	79
cell	(2)	20	G.	1							

47. SYNTAX.

Individuality Frequency, 67.

Failure Frequency, 3.

adverb	2	context	1	L.	1	question	1	syndicate	1	
agreement	1	correctly	1	logic	1	reflex	1	synonymous	1	
algebra	1	declension	7	mathematics	3	regents	2	synthesis	7	
analysis	(1)	6	diagram	2	M.	1	relation	3	synthetic	2
analyze	6	diagrams	(1)	1	meaning	1	relationship	1	system	1
Anglo-Saxon	1	dictio	1	M.	1	rhetoric	(3)	tax	(1) 3	
arithmetic	2	division	1	noun	(1) 19	rule	2	technical	1	
arrangement	(1)	3	doctor	(1)	8	rules	3	tin tacks	(1) 1	
beauty	1	English	19	nuisance	1	sailor	1	together	1	
book	1	English grammar	1	numbers	1	school	4	use	1	
botany	1	form	2	of	1	schoolroom	1	verb	(7) 49	
Cinderalla	1	French	1	parse	(1) 4	science	(1) 1	verbs	(1) 8	
class	1	genealogy	1	parsing	3	sentence	(5) 42	verse	1	
classification	1	German	1	participle	1	similar	1	Virgil	1	
classroom	1	grammar (57)	577	phrase	1	S.	1	word	(1) 11	
climax	(1)	1	grammatical	(1) 2	plates	1	speech	(1) 3	words	(1) 8
combination	1	Greek	(2)	play	1	spelling	1	work	1	
composition	3	hard	1	predicate	(1) 2	structure	(1) 7	writing	1	
concept	1	instruction	1	preface	1	study	2	Wundt	1	
conjugation	(1)	3	labor	1	pronoun	1	subject	1	Xenophon	1
connection	1	language	(1) 14	prosody	(7) 27	S.	1	yawning	1	
construction	19	Latin	12	pupils	1	syncopate	1			

48. DISTILLATION.

Individuality Frequency, 91.

Failure Frequency, 2.

alcohol	(9) 77	constellation	1	extension	2	liquors	6	sight	1	
ammonia	2	contraction	1	extract	1	M.	2	solution	3	
analysis	1	cremation	1	eyes	1	medicine	1	spelling	1	
apparatus	5	crystallization	1	fermentation	2	mercury	1	spirits	11	
atmosphere	1	destructive	1	fever	1	moonshine	1	stars	2	
beaker	(1)	1	dew	9	filter	(1) 8	oil	1	steam	(2) 21
beer	5	dilation	1	filter paper	1	oils	1	still	(2) 10	
blood	(1)	1	distance	1	filtration	3	percentage	1	sublimation	(1) 1
boil	3	distant	1	flask	(1) 12	percolation	1	sugar	1	
boiler	(1)	1	distend	1	fluid	3	physics	9	sulphuric	1
boiling	(5) 13	distil	5	fluids	2	pouring	1	superior	1	
booze	1	distillate	(2)	2	fraction	3	precipitate	1	swamp	1
bottle	(1)	5	distilled	2	fractional	(1) 15	pressure	1	swelling	1
Bourbon	1	distillery	6	fractionating	1	pressures	1	swollen	1	
brandy	2	distilling	(1)	2	fractionation	(1) 2	process	7	temperature	1
brewery	(1) 11	drink	1	gas	3	product	1	titration	(1) 1	
brewing	2	drinking	1	heat	7	professor	1	tube	2	
bromide	1	drop	2	heart	1	proximity	1	tubes	1	
carboy	1	drops	(1)	4	H ₂ O	1	pure	3	vacuum	1
cell	1	drug store	1	hydraulic	1	purification	(1) 10	vapor	(5) 12	
change	1	drying	1	improvement	(1)	purify	5	vaporization	1	
chemical	2	ebullition	(1)	1	inflated	1	purifying	2	vaporize	1
chemistry	(8) 96	electricity	1	inhalation	(1) 1	purity	(1) 4	volatility	1	
cider	2	enlarge	1	instillation	1	reduction	2	volatilization	1	
clear	1	essence	2	Kentucky	1	refining	1	volume	1	
coagulation	(1)	2	ether	1	laboratory	(2) 3	research	(1) 1	water	(20) 258
coffee	1	evaporation	(5)	18	line	1	retort	(1) 10	whiskey	(11) 98
coil	1	exhalation	3	liquid	(2) 12	rye	1	wine	8	
concentration	1	expanding	2	liquidation	1	science	2	wines	1	
condensation	10	expansion	1	liquids	5	separating	1	work	1	
	(3)	experiment	3	liquefaction	1	separation	5	worm	1	
condenser	(1) 4	extend	1	liquor	(1) 32	sifting	1	yeasts	(1) 1	

49. POLLEN.
Individuality Frequency, 54.

Failure Frequency, 4.

anther	(4)	11	cross	hay fever	(1)	5	plantago	1	sperm	1	
anthers	1		fertilization	1 Holland		1	plants	(3)	spore	1	
Apollum	1		daffodils	1 honey		3	Poland	2	spring	(1)	
bee	(3)	32	dust	(3) 17	insect	1	polyandry	2	sprout	1	
bees	16		Dutch	1 insects	(1)	4	pool	1	stamen	(3)	
beeswax	1		fecundation	1 leaf		1	poppy	2	stamens	2	
Belgium	(1)	1	fertility	1 life		1	powder	(1)	stigma	(1)	
biology	2		fertilization	(4) 16	lily	3	reproduction	3	tassel	1	
botany	(6)	73	fertilize	1 lycopodium		1	return	1	tube	(2)	
bumble bee	1		fish	1 male		2	rhododendrons	1	vegetation	1	
butterfly	1		flower	(36) 419	M.	1		(1)	water	2	
Campbell	1		flowers	(4) 99	ovule	(1)	3	rose	1	weeds	1
carrying	1		garden	1	pallial	1	scatter	1	wheat	1	
college	1		germination	1	paper	1	seed	(2)	wind	1	
color	1		gold	1	petals	1	semen	(1)	yellow	18	
C.	1		grain	(1) 12	picture	1	serum	1	yellow dust	2	
core	1		grains	3	pistil	6	smell	(1)	yellow powder	1	
corn	8		granules	1	plant	(18) 82	soft	1		(1)	
corn pollen	1		Greek	1							

50. PENINSULA.
Individuality Frequency, 68.

Failure Frequency, 3.

Alaska	1	dirt	1	land	(14) 172	Ohio	1	sharp	1
America	1	Dover	1	land forms	1	oriental	1	Sinai	(1)
amoena	(1)	estuary	1	Leland Stanford	1	Panama	10	sound	1
arm	1	extension	2	Lower		paper	1	south	1
bay	(1)	Florida	(6) 64	California	1	pen	1	South America	2
body of land	1	form	2	Madagascar	1	peninsula	1	Southern	
boot	1	Gallipoli	1	Magellan	2	penning	1	California	2
California	1	geography	(10) 128	mainland	1	Pennsylvania	1	Spain	(3) 33
campaign	5	German	1	Malay	(1)	physical	1	Spanish	5
cape	(4) 35	Gibraltar	2	map	(2) 16	geography	1	spit	(1)
Cape Cod	(1)	Good Hope	1	Massachusetts	1	physiography	1	strait	(4) 22
Cape Horn	1	Greece	3	Mexican	1	point	(2)	straits	2
Chesapeake	1	gulf	2	Mexico	1	point of land	1	stretch	1
connection	1	headland	1	Michigan	(1)	Portugal	2	thin	1
continent	(1)	Iberian	(1)	milk	1	projection	6	tongue	1
Corea	1	island	(25) 210	Miseno	1	river	1	triangle	1
Cornwall	1	isthmus	(2) 22	narrow	2	Sagamore	1	upper	2
country	2	Italy	(3) 18	neck	(2) 19	sand	1	Virginia	1
Crimea	1	Jamestown	1	neck of		San Francisco	1	war	(1)
delightful	1	jutting	1	land	(1)	San Mateo	1	water	(6) 55
Denmark	2	Kiau-Chow	1	New York	(1)	Scandinavia	3	work	1
description	(1)	Korea	1	Norway	1	sea	(1)	York	1
diagram	1	Labrador	2	ocean	(1)	shape	(1)	Yucatan	(1) 8

51. BINOMIAL.
Individuality Frequency, 63.

Failure Frequency, 6.

accuracy	(1)	1	curve	3	grammar	2	number	(1)	S.	2
algebra	(7)	118	decimal	1	Greek	1	numbers	5	surd	1
algebraic	1		diurnal	1	G.	1	numeral	1	synonymous	1
angle	1		double	(2)	half	1	one	1	system	3
annual	1		double name	1	hyphen	(1)	P.	1	term	(1)
arithmetic	14		dual	2	letters	1	physics	1	terms	(1) 2
bilateral	1		equation	(1)	Linnaeus	(3)	physiology	1	theorem	(54) 510
bimanual	1		expansion	3	logarithm	(1)	polynomial	(2)	theory	28
binocular	1		exponent	2	mathematical	1	power	(1)	trinomial	(2) 20
biometric	1		factor	1	mathematics	(6) 40	problem	1	twice	3
biometrical	1		factors	1	memory	1	progression	1	two	(2) 48
bionomics	1		figure	4	monomial	(1)	pseudonym	1	two names	2
book	1		figures	1	multinomial	1	quadratic	1	two number	1
botany	1		formula	(1)	name	(4)	quantity	1	two numbers	1
calculus	1		fraction	(1)	Newton	(2)	school	1	two parts	1
classification	1		fractions	2	noim	1	science	1	two term	1
coefficient	1		genetics	1	nomenclature	12	sentence	1	unit	1
college	1		geometry	(1)	name	(3)	single	1	word	2
comic sections	1		G.	(1)	noun	1	study	1	zoology	1
cousin	1		glasses	1						

52. CRUSTACEAN.
Individuality Frequency, 93.

Failure Frequency, 7.

age	7	classification	2	fat	1	low life	1	scale	1	
amphibian	2	coagulation	1	fish	(1)	26	mineralogy	1	school	2
amphibious	1	coating over	1	flower	2	molluse	(8)	42	science	(1)
amphipod	1	copapod	1	fluid	1	molluscan	1	scum	1	
anatomy	1	coral	3	fossil	1	molluscs	1	sea	5	
animal	(6)	covering	2	Friday Harbor	1	moon	1	sea shore	1	
animals	1	crab	(22)	139	frog	1	moult	1	seek	1
annelid	1	crabs	(2)	5	frustration	(1)	mud	1	shell	(8)
anthropology	1	crank	1	geography	3	ocean	1	shelled	2	
antique	1	crater	2	geological	1	organism	2	shell fish	(4)	
appendage	(1)	crawfish	(2)	10	geology	66	origins	(1)	shells	(2)
apple	1	crayfish	(5)	37	hard	(3)	oyster	10	shelly	1
arthropod	(1)	crossing	1	hardening	4	oysters	1	ship	1	
arthropods	1	crushing	1	hardness	1	paleontology	1	shrimp	1	
astacus	1	crust	(1)	28	horseshoe crab	1	parasite	1	snail	2
baked	1	crustacea	1	incrustation	1	period	8	snails	1	
barnacle	2	crusty	2	insect	(1)	physics	1	solution	1	
biological	1	crystal	4	insects	1	physiology	1	star fish	2	
biology	(1)	crystallization	3	invertebrate	(1)	pie	1	study	1	
bone	3	crystallography	1	isopod	2	plant	4	surface	7	
break	1	crystallize	1	K.	1	pollen	1	swamp	1	
bugs	1	crystals	1	laboratory	1	primitive	2	temper	1	
calcium	1	development	(1)	land	2	pristine	1	thick	1	
cambarus	1	D.	1	lava	1	protozoon	1	thickening	1	
carapace	1	dinosaur	(1)	legs	1	rain	1	turtle	4	
cephalopod	1	early	1	life	(1)	rock	4	vertebrate	3	
cerulean	1	earth	47	liquid	1	rocks	6	water	2	
chrysanthemum	1	edge	1	lobster	(15)	roughness	1	white	1	
clam	(1)	encrusted	2	lobsters	(2)	rough surface	1	worm	1	
clams	(1)	entomostracan	1	lower animals	1	salt	1	zoology	(5)	
class	2	exoskeleton	1	(1)					37	

53. BONAPARTE.
Individuality Frequency, 61.

Failure Frequency, 0.

Alps	1	D.	(1)	1	guinea pig	1	name	1	soldier	5
ambition	2	Elba	(1)	4	H.	1	Napoleon	(45)	559	Spanish
Antoinette	1	emperor	(1)	2	hat	1	N.	1	story	1
army	1	England	1	Helena	(1)	3	niche	1	strength	1
battle	6	Europe	1	hero	2	painting	1	successful	1	
Beauharnais	1	explorer	1	history	(2)	16	Paris	(2)	tomb	1
Blenkins	1	fate	1	horse	2	picture	3	tyranny	1	
bona fide	1	father	1	Iowa	1	portrait	1	tyrant	1	
bone	1	fool	1	island	1	rascal	1	victor	1	
Boney	1	France	(9)	101	joke	1	revolution	(1)	Victor Hugo	(1)
Bordentown	1	French	(4)	20	Josephine	7	revolutionary	1	victory	2
Buonarotti	1	Frenchman	1	king	1	Rhine	2	W.	1	
cartoon	1	French		leader	(1)	ruler	1	war	(3)	
Channing	1	Revolution	2	little	(1)	2	Saint		wars	(1)
commander	1	gambler	1	Louis	1	Helena	(3)	Washington	1	
C.	1	general	(8)	61	Louise	1	short	1	Waterloo	(9)
Cornwallis	1	genius	4	man	(2)	10	Sicily	1	Wellington	(3)
Corsica	9	gorgeous	1	Maryland	1	smallness	1	W.	1	
Corsican	(1)	great	2	Moscow	1					

54. MERIDIAN.
Individuality Frequency, 83.

Failure Frequency, 1.

across	1	chart	1	distance	2	geography	(9)	128	hot	2
after	1	China	1	division	2	geology	1	hundredth	2	
afternoon	1	circle	(1)	24	divisional	1	globe	(2)	imaginary	4
altitude	1	circles	1	earth	(6)	50	Greenwich	(9)	imagination	1
angle	1	cold	1	East Boston	1	heat	4	Indianapolis	2	
arc	1	compass	(1)	2	elliptic	(1)	heavens	3	Iowa	1
artificial	(1)	Connecticut	2	England	1	height	2	isogenism	1	
astronomy	(5)	day	2	equator	(3)	55	hemisphere	(2)	isothermal	1
axis	1	derivation	1	equinox	(1)	1	high	2	land	1
azimuth	1	diagram	1	first	2	hill	(1)	latitude	(4)	
Boston	1	dial	1	forty-ninth	1	hops	1	line	(8)	
center	3	diatom	1	Galileo	1	horizon	1	lines	4	
central	1	dies	1	geodesy	1	horizontal	(1)			

57. MADAGASCAR.

Individuality Frequency, 101.

Failure Frequency, 1.

Africa	(18)	143	continent	(4)	26	1	island	(44)	361	nation	1	southern	1
Alaska	1	country	(4)	26	ivory	1	native	3	Spain	(1)	21		
alligator	1	Cuba		1	Jaffa	1	natives	1	spices		1		
America	1	dark		1	Japan	1	negro	9	sporotrichosis		1		
ape	1	discoverer		1	Jerusalem	3	negroes	2	state		2		
Asia	1	dodo	(1)	1	king	(1)	1	niggers	1	strait	(3)	59	
Australia	4	dummy		1	Labrador	1	ocean	1	straits	(2)	37		
automobile	1	eastern		1	land	10	oranges	1	sword		1		
awk	1	England	(1)	2	lascar	2	orient	2	Tamerlane		1		
aye-aye	1	English		1	lemur	(1)	1	peninsula	(1)	Tananarivo		1	
Balboa	1	entomology		1	lemurs	1	people	1	Tasmania		1		
bay	18	Europe		1	madrigal	1	picture	1	Tierra del				
Bernadotte	1	exploration		2	Magellan	5	place	5	Fuego		1		
black	1	explorer		2	maid	1	Portugal	2	town		1		
blacks	1	flora		1	Maine	1	province	1	travel	(1)	2		
Borneo	2	foreign		2	Malay	3	queen	1	troiss				
Britain	1	F.	(1)	1	man	1	races	1	gudheen		1		
British	1	France	(2)	15	Mandalay	1	Ravalona	(1)	tropics		1		
cannibal	1	Freiligrath		1	map	(2)	15	region	1	Turkey		1	
cannibals	1	French	(3)	17	matting	1	remote	1	W.		1		
cape	8	geography	(5)	61	Mauritius	2	round island	1	W.		1		
Ceylon	1	Gibraltar		1	metaphysics	1	savages	2	war		1		
channel	1	globe		1	mission	1	Saint Pierre	1	water		5		
charades	1	grapes		1	missionary	2	scramble	(1)	wine		2		
Chili	1	Greenland		1	moa	1	sea	4	woolly Indians		1		
city	5	heathen		2	monkey	2	Senegambia	1	word	(1)	1		
cloth	1	Helgoland	(1)	1	Moor	1	Slocum	1	yellow		1		
coast	1	history		2	Morocco	1	south	2	Zanzibar	(1)	3		
colonization	1	Hova	(1)	1	Mozambique	(2)	2	South Africa	(1)	zoography		1	
colony	1	India		1	Napoleon	1	South America	4	Zulu		1		
colored	2												

58. COROLLA.

Individuality Frequency, 104.

Failure Frequency, (3) 75.

ambition	1	C.		1	fringe	(1)	1	Newton	(1)	1	sea	2	
analogy	1	coral	(1)	37	gem	1	ocean	(1)	1	seed	(1)	1	
ancient history	1	corals		6	geological	1	painter	1	sepal	(1)	3		
animal	3	Corelli		1	geometry	9	painting	1	sepals		1		
aster	1	cornea		1	gorilla	1	pansy	1	shape		1		
astronomical	1	corollary	(1)	37	grammar	1	part	1	similar		1		
astronomy	6	corona	(4)	21	guerilla	1	penumbra	1	snake		2		
aurora borealis	1	coronae		1	halo	1	perianth	(2)	Sorella		1		
(1)		corral		2	head	1	petal	(6)	sound		1		
beauty	1	correlative		1	hypothesis	1	petals	17	Spain		2		
bee	(1)	correlative		2	infer	1	petiole	1	Spanish		1		
biology	3	correspond		1	insect	(1)	2	physiology	1	spermifites	(1)	1	
blossom	2	covering		1	island	3	pink	1	spiked		1		
boat	1	crown	(2)	21	Koran	(1)	1	pistil	(1)	10	stamen	7	
body	2	crowned		1	Latin	1	pistils	1	stamens	(1)	6		
bone	(1)	cruller	(1)	2	light	3	plant	(8)	star		4		
borealis	2	crullers		1	lily	3	plantago	1	stem		1		
botanical	(1)	cup-shaped		1	logic	1	plants	(1)	stone		1		
botany	(3)	curve		1	L.	1	pollen	(2)	sun	(4)	25		
calyx	(6)	daisy	2	2	L.	1	Porto Rico	1	supplement		1		
carol	1	derivation		1	marble	1	principle	1	teacher		1		
C.	1	diagram		1	M.	1	pronunciation	1	technical		1		
cerebellum	1	disease		1	mathematics	2	(1)	theorum		3			
cheese	1	dogwood		1	Mexican	1	queer	1	together		1		
chlorophyll	1	enclosure		1	moon	(1)	4	red	(1)	tooth-paste		1	
chorea	1	envelope		1	morning glory	2	reef	1	triangle		1		
circle	5	Esse		1	morphology	(1)	1	resulting	1	truth		1	
cobra	1	eye		8	moth	1	ring	3	white		2		
collar	(1)	fish		1	Naples	1	rocks	1	word		1		
color	6	flower	(34)	330	narcissus	1	R.	1	yellow		1		
comma	1	flowers	(1)	13	neck	3	science	1	zoology		1		
copula	1	following		1	nerve	(1)	1						

59. VENTRAL.

Individuality Frequency, 102.

Failure Frequency, (3) 15.

abdomen	(1)	8	column	1	heart	(5)	124	outside	1	top	1	
abdominal		5	come	1	hernia		4	pericardium	1	towards me	1	
aboral	1	cord	(1)	1	hole		1	peripheral	(1)	tribobate	1	
above	1	crayfish		1	hollow		1	peritoneum		tube	1	
alimentary		1	cut		1	human		1	physical	1	tubercular	1
anatomy	(1)	12	deep	1	hydroxygen		1	physiology	30	under	(1) 21	
animal	(1)	9	diaphragm	1	internal		1	picture	(1)	underneath	(1) 4	
anterior	(1)	4	dictionary	1	intestinal		1	pin		under side	1	
aorta	1	digestion		1	intestines		2	position	4	upper	1	
apex	1	door		3	island		1	posterior	6	valve	(2) 6	
artery	1	dorsal	(34)	201	lateral		4	process	1	vein	6	
aspect	(1)	2	down	(1)	2	leaf	(1)	1	psychology	1	veins	1
atrocities		1	ear		1	leaves		2	rear	1	Venezuela	1
aural	1	earthworm		1	left		11	region	1	vent	3	
auricle	(1)	11	electrocardiogram	1	lobe		1	right	6	ventil	1	
back	(2)	21	entrance	2	lobular		1	right	6	ventilate	1	
being	1	exit		3	low		1	segment	(1)	ventilation	(1) 2	
belly	(7)	21	eye	1	lower	(3)	16	segmentation	1	ventnor	1	
below	(1)	6	face	1	lungs		2	segments	1	ventres	1	
beneath	1	facial		1	Marchantia		1	side	(4)	ventricle	(1) 10	
B.	1	fan		1	median		2	sides	2	ventriloquism	4	
biology	(1)	7	fin	5	medical		1	sinistral	(1)	ventriloquist	(1) 20	
blood	3	fish		3	morphology		1	space	1	ventrimeter	1	
body	(2)	18	fixation	1	mouth		1	spinal	2	ventrix	1	
botany	1	flat		1	nerve		3	spine	(1)	vertebrate	1	
bottom	2	floor		1	nervous		1	sternal	1	vitriol	1	
bowel	1	forward		1	nose		1	stomach	(8)	voice	2	
brain	8	frog		3	occipital		1	superior	1	vortex	1	
bursting	1	front	(3)	35	open		1	surface	(1)	west	1	
canal	2	fur		1	opening	(1)	28	surgery	1	wind	23	
cavity	(1)	5	gap	1	oral		1	suspension	2	window	3	
cell	1	gastropods	(1)	1	organ		4	system	3	zoological	1	
centre	1	hadrome		1	orifice	(1)	2	teacher	1	zoology	4	
central	(1)	2	half		1	outlet		1	throat	2		

60. BELGIUM.

Individuality Frequency, 84.

Failure Frequency, 1.

accident		1	country	(9)	92	history	1	Mons	1	soldier	5	
Albert	(2)	10	crime	1	Holland	(16)	100	murder	1	soldiers	2	
allies	(1)	1	cruelty	1	homeless		1	Napoleon	1	Spain	12	
anguish	1	destroyed		1	horror	(2)	5	nation	4	starvation	1	
Antwerp	7	destruction		4	horrors	(1)	3	Netherlands	5	state	(2) 9	
army	(1)	1	devastation	1	hunger		1	neutral	2	strike	2	
atrocities	5	disaster		1	hungry		1	neutrality	7	suffer	1	
atrocity	4	dog	(1)	1	invasion		1	oppression	2	sufferers	2	
Austria	1	Dutch		2	island		2	outrage	(1)	suffering	(1) 15	
bank	1	England		3	Italy		1	painting	1	sufferings	1	
battle	(1)	3	Europe	(5)	51	Kaiser	5	peace	1	Swede	1	
battles	1	European		1	king		5	people	5	Switzerland	1	
Belgae	1	famine		1	King Albert		2	pillage	1	tragedy	1	
Belgian	3	Flanders		1	knitting	(1)	3	plain	1	treaty	2	
bellicose	1	foreign		1	lace		1	politics	1	troops	1	
black	1	France	(1)	29	land	(2)	7	poor	3	trouble	2	
brave	2	Francois		1	lavender		1	Portugal	1	Turkey	1	
bravery	3	French		2	Leopold	(2)	20	present war	1	uniforms	(1) 1	
bravest	1	Gaul		1	Liege	(1)	8	Prussian	(1)	university	(1) 1	
Brussels	(10)	33	Gembloix		1	location	(1)	1	queen	1	valor	1
Caesar	1	geography	(2)	10	Louvain		9	refugee	(1)	violation	1	
calamity	1	German	(1)	6	low	(1)	1	refugees	(1)	Wales	1	
canals	1	Germans	(1)	7	Maeterlinck		1	relief	13	war	(20) 286	
Cerfontaine	1	Germany	(3)	53	map	(1)	13	rubber	1	warfare	1	
Chamisso	(1)	1	glass	1	massacre		1	small	1	Waterloo	(1) 5	
city	(1)	1	government	2	minds		1	smallness	1	W.	(1) 1	
Congo	3	hare	(1)	6	misery		2	smashed	1	Wilhelm	1	
contribution	1	hares		1	misfortune		1	socks	1	woe	1	
cooperation	1	hell		2								

61. TANGENT.

Individuality Frequency, 74.

Failure Frequency, 0.

across	1	curve	(3)	16	going off	1	plain	1	straight	5
adjacent	2	derivative		1	go off on (1)	1	procession	1	stretching	(1) 1
adjoining	1	deviation		2	hanging	1	projection	1	surveying	1
aeroplane	1	diagram	(1)	2	Heidelberg	1	queer	(1) 1	tangential	4
against	1	different		2	hypotenuse	1	radial	(2) 2	tangerine	1
anger	2	differential		1	idiosyncracy	1	radiating	1	tango	2
angle	(3) 17	divergence		1	joining	1	radius	5	tantrum	2
angles	1	drawing		1	junction	1	railroad	1	T.	1
arc	(1) 1	drunk		1	life	1	railroads	1	temper	2
at	1	Emma		1	line (9) 110	1	ratio	(1) 1	tetrahedron	1
away	2	even		1	lines	1	rays	(1) 1	text-book	1
bicycle	1	falling		1	mathematics (3) 21		relation	(1) 1	time	1
branching	1	figure		4	mistake	1	right angle	1	to	1
chord	1	figures		1	movement	1	secant	(11) 81	touch	(1) 12
circle	(22) 249	flag		1	near	1	section	2	touching	(1) 20
circles	1	flying		4	nearness	1	show	1	tracing	1
circumference	4	flying off		1	next	1	side	7	triangle	(1) 8
	(1)	force		1	oblique	2	sine	(5) 22	trigonometry	(8) 76
close	2	function (1)	2	of a circle		1	slant	3	unite	1
comet	1	galvanometer	2	off		6	sling	1	vicinity	1
contact	1	geometrical	1	offshoot		2	sphere	2	V.	1
cosecant	(2) 14	geometry (6) 107		1	opposite	1	steel	1	wheel	2
cosine	(3) 9	G.	1	physics		2	stick	1	wild	1
cotangent	(10) 84	going	1	picture		1				

62. DORSAL.

Individuality Frequency, 62.

Failure Frequency, (1) 10.

abdominal	1	direction		1	left	2	physiological	1	stomach	1
above	(1) 5	docile		3	lower	1	physiology	19	straight	1
anatomy	(2) 11	door		2	lumbar	1	position	(1) 4	surface	(1) 3
animal	(1) 4	door-sill	(1)	2	lung	1	posterior	(1) 7	tail	1
anterior	3	door-step		1	lungs	1	psychology	2	teacher	1
architect	1	D.		2	man	1	quiet	4	thin	1
aspect	(1) 4	D.		1	manikin	(1)	radial	1	top	7
back	(24) 270	D.		1	medicine	1	rear	3	under	3
backbone	(2) 7	entrance		1	meek	1	right	2	up	(1) 1
behind	1	fin	(8) 103	1	membrane	2	science	2	upper	(3) 21
below	1	fins		3	metatarsal	1	section	1	upper side	1
biology	(1) 6	fish	21	mind	1	shark	(1) 5	valve	(1) 1	
body	6	flesh		1	motion	1	sharks	(1) 1	vein	3
bone	9	foot		1	muscle	3	side	(3) 17	ventral	(34) 243
bones	1	frog	2	nerve	(1)	3	skull	1	vertebra	(1) 17
botany	1	front	6	nerves		1	sleep	1	vertebrae	(2) 29
brain	2	frontal	2	nose		1	slit	1	vertebrate	9
breathing	1	geology	1	opening		1	snake	1	vertebrates	1
canal	1	grasshopper	2	opposite	(1)	1	soft	1	waist	1
cavity	4	head	2	paleontology		1	spinal	5	whale	6
charts	1	heart	(1) 6	part		1	spinal cord	1	worm	1
column	(1) 3	horseback	(1) 1	peace		1	spine	12	zoology	3
cord	(1) 1	jamb		1	physical	2	spiny	1		
curve	1	leaf	(1) 1							

63. COLLOID.

Individuality Frequency, 168.

Failure Frequency, (1) 141.

advertisement	1	amorphous	(1)	2	bone	12	celloidin	1	cholera	1
albumen	(3) 9	analysis		1	bones	1	celluline	(1) 1	chromogen	1
albuminoid	(1) 1	anatomy		4	botany	1	celluloid	66	circle	1
albuminous	1	arrow		1	c.	1	cellulose	1	circus	1
alcohol	2	artery		1	calor	1	cement	1	class	1
alloid	2	asteroid		1	calyx	1	chemical	13	clouded	1
alloy	1	balloon		1	carbohydrate	1	chemistry	(12) 132	coagulate	2
aluminum		biology	(1)	8	carload	1	chloral	1	coagulation	2
hydrate	1	blood	(1)	2	casein	(1)	chlorophyll	1	coal oil	1
amoeba	(1) 1	body		4	cell	(1) 8	chocolate	1	coat	1

Coliseum	1	diffusion	(1)	1	isinglass	1	parchment	1	spheroid	1	
collar	29	drug		2	isocolloid	1	particle	(1)	spiral	1	
collar bone	1	drugs		1	jelly	(9)	28	particles	(1)	starch	(1)
collate	1	dynamite		1	jelly-like		1	pasty	(1)	state	(1)
collateral	1	egg		5	joke		1	pen		sticky	5
colleague	1	egg-white		1	K.		1	penetrable		stiff	1
collection	1	electrolyte		1	Kipling		1	physics	2	stiffness	1
college	2	enzyme		1	L.		1	physiology	10	structure	1
collide	4	ether		1	large		1	pigment	1	study	1
collision	1	eye		1	lipoid		1	plate	2	substance	(3)
collodic	1	fat		2	lipoids		5	precipitate	6	sugar	1
collodion	4	ferric hydroxide		1	liquid		1	precipitation	2	surface tension	1
collodium	(1)	film		1	L.	(1)	1	preparation	1	suspension	6
colloidal	2	filter		1	L.		2	process	3	suspensions	(1)
collop	1	F.		1	mass		1	proteid	3	system	(1)
collusion	1	fluid	(1)	1	mastoid		1	protein	(1)	tabloid	1
colon	1	food		1	material		3	protoplasm	(3)	talcum	1
color	(1)	form		3	matter		1	purification	1	tar	1
columbine	1	gel		2	medical		5	rhomboid	1	teacher	1
column	8	gelatin	(3)	8	medicine		1	science	5	teleology	(1)
columnar	1	gelatinous		5	member		1	scientific	1	term	1
combination	1	geology		1	membrane	(1)	8	scollop	1	thick	(1)
compound	3	geometry		2	metal		2	semi-permeable	1	throat	1
condition	2	glue	(3)	11	milk	(1)	2	membrane	1	thyroid	(1)
conjunction	1	glue-like		1	mineral		1	sewage	6	thyroid gland	1
cool	1	gluey	(1)	1	mixture	(1)	6	shape	1	tissue	4
copper	1	goitre		1	molasses		1	shapeless	1	together	2
coral	1	gold	(1)	8	molecule		2	silica	2	translucent	1
covering	1	G.	(1)	3	motion	(1)	1	silver	1	tumor	1
crown	1	Greek		1	mucilage		1	skin	1	turbidity	(1)
crystal	(2)	green	(1)	1	mucoid		1	sky	1	turning	1
crystalline	(1)	gum	(1)	2	mucus		1	small	(1)	uncrystalline	1
crystallization	1	hand		1	muscle		5	smoke	1	unfilterable	1
crystallize	1	hanging		1	neck		1	society	1	unmixable	1
crystalloid	(10)	38	hard	2	nerve	(1)	1	soft	2	viscous	(1)
cylinder	1	haziness		1	non-diffusible		1	soil	1	water	1
dense	1	heat		3	nothing		2	sol	1	weed	1
derivation	1	human body		1	oil		1	solution	3	wood	1
derivative	1	immunity		1	osmosis	(2)	4	solid	6	word	1
dialysis	1	impenetrable	(1)	1	O.		9	34	1	zoology	3
dictionary	1	insoluble		3	palladium		1	spelling			
dietetics	1	iron		2							

64. EQUATOR.

Individuality Frequency, 77.

Failure Frequency, 0.

Africa	(1)	4	crossing	3	hair	1	medium	1	side	1	
Amazon	3	Cuba		2	half	2	Mercator	1	south	14	
Ancient Mariner	1	curve		2	heat	(1)	52	meridian	(8)	South America	13
antipodes	1	declination	(1)	1	hemisphere	(1)	4	Mexico	3	southern	1
apple	1	depression	(1)	1	horizontal	1	middle	(1)	sphere	1	
astronomy	1	diameter		3	hot	(8)	65	middle line	1	spheroid	1
axis	(1)	distance		2	imaginary	6	midway	2	story	1	
band	1	divides		1	imaginary line	2	Neptune	1	substantive	1	
basal	1	dividing		2		(1)	north	1	sun	(1)	
belt	(1)	doldrums		2	imagination	1	North Pole	4	Tahiti	1	
black	(1)	ducking		1	island	1	Panama	7	temperate	(1)	
Borneo	1	earth	(15)	160	isthmus	1	parallel	(1)	torrid	(2)	
Brazil	(1)	10	Ecuador	(2)	7	Java	(1)	1	torrid zone	1	
cacti	1	Egypt		1	jungle	1	Peary	1	tropic	(1)	
camel	1	encircle		1	Kipling	1	Peru	1	tropical	1	
Capricorn	4	equal		6	land	1	picture	1	tropics	(4)	
Caribbean	2	equalizing	(1)	1	latitude	6	place	2	Twain	1	
center	(2)	24	equation	1	line	(11)	147	pole	5	vernal	1
central	(1)	8	equator	1	localities	1	poles	1	vessel	1	
ceremony	1	equinox	(1)	5	longitude	1	position	1	voyage	1	
Chili	2	friend		1	luxuriant	(1)	1	Quito	2	warm	5
circle	(9)	32	geographical	1	Magellan	1	quotation	1	warmth	1	
circular	1	geography	(5)	55	Malay	1	race	1	world	(1)	
circumference	(1)	2	girdle	1	map	11	1	Roosevelt	7	zodiac	1
Clemens	1	globe	(4)	26	Mark Twain	(2)	4	round	1	zone	5
climate	1	goal		1	mathematical	(1)	1	running	1	zones	1
cold	(1)	1		1	seed						

65. JUDICIARY.
Individuality Frequency, 80.

Failure Frequency, 1.

act	1	courtroom	(1)	3	Judas	1	M.	3	Roosevelt	(1)	6
action	1	courts	(6)	35	judge	(25)	271	Massachusetts	1	senate	1
administration	2	crime	(1)	2	judges	(3)	41	Mc.	1	settlement	(1)
(1)		C.		1	judging		3	men	1	state	1
administrative	1	decision		1	judgment	(2)	11	midnight	1	supreme	(1)
appointment	1	decisions	(1)	3	judicate		1	military	1	supreme court	6
authority	1	department		7	judicial	(1)	5	municipal	1	(3)	
awe	1	dignity		2	judicious	(1)	2	Napoleon	1	systems	1
bad	1	election	(1)	1	jury	(1)	2	national	2	T.	(1)
balance	1	English		1	just		1	nominations	1	terminology	1
bench	(1)	equity		3	justice	(2)	26	nominators	(1)	T.	1
beneficiary	2	executive	(1)	23	law	(8)	129	office	(1)	thief	1
body	9	false		1	laws	(1)	4	peace	1	think	1
boy	1	federal	(2)	9	lawyer		4	P.	1	trial	(2)
B.	1	force		1	lawyers		1	police	(1)	trials	1
B.	1	form		1	legal	(3)	13	politics	3	tribunal	2
circuit	1	function	(2)	7	lega lsystem		1	power	2	unbiased	1
civics	4	government	(5)	40	legislation		1	powers	3	usurpation	1
civil	1	governor		1	legislative	(3)	15	proceedings	1	voting	1
civil government	1	graft		2	legislature	(1)	8	progressive	1	war	1
commission	1	grave	(1)	1	level		1	punishment	1	Washington	2
committee	(1)	G.		1	L.		1	recall	(2)	W.	2
congress	1	hair		1	L.		1	referendum	2	W.	1
conservative	1	history		1	lynch	(1)	1	reform	(1)	wig	1
constitution	1	H.		2	magistrate		2	right	1	wigs	1
contrast	1	Japan		1	man		1	rightness	1	wise	1
court	(9)	142	joke		1	management		1	robe		

66. SYNTHESIS.
Individuality Frequency, 123.

Failure Frequency, 14.

action	1	chemotherapy	1	food	1	mixing	1	science	4	
addition	(2)	4	chlorophyll	1	foot	(1)	1	sentence	9	
adverb	1	coal tar		1	form		1	separate	2	
agreement	1	coherence		2	formation	(1)	5	opposite	4	
alcohol	1	cohesion		3	fusion	(1)	1	opposition	2	
algebra	3	collection		4	gathering		3	organic	7	
alike	1	combination	(5)	30	gems	(1)	1	organic chemistry	1	
anabolism	1	combine		1	glycocol		1	organization	2	
analogy	1	combining	(1)	6	grammar	(1)	44	outline	1	
analysis	(38)	308	comparison	2	Greek	2	parenthesis	1	Spencer	1
analytics	1	complex	(1)	2	group	1	part	1	starch	(1)
analyze	(1)	compose		1	grouping	2	philosophy	4	substance	(1)
analine	1	composition	(1)	4	harmony	2	photo	2	substances	1
anthesis	2	compound		5	heat	1	photosynthesis	9	substitution	1
antithesis	28	compounding		1	hoe	1	(1)	sun	1	
argument	2	compounds	(1)	1	hypothesis	1	physics	1	symmetry	2
arrangement	2	conclusion		1	integration	1	picture	1	sympathy	1
assemble	2	connection		2	intellectual	1	plant	(1)	synchronistic	1
assembling	2	connections		1	join	1	plants	1	syncopate	1
association	1	construct		1	joining	6	preparation	2	synopsis	1
ball	1	construction	12	Kant		1	process	(1)	syntax	(2)
Bible	1		(1)	katabolism		5	synthetic	8	24	
biology	2	contact		1	laboratory	(1)	1	system	1	
blending	1	coordination		1	language		3	tearing	1	
bone	1	creature		1	Latin		4	text-book	1	
bones	1	C.		1	life	1	psychosis	1	thesis	1
botany	2	decomposition		2	light	4	pubes	2	think	1
break	1	development		1	likeness	5	put	1	thought	1
breaking	1	dialysis	(1)	3	line	1	putting	3	titration	1
build	9	diathesis	(1)	3	literature	2	together	(1)	together	(7)
building	(2)	20	dictionary	2	logic	12	14	union	(2)	55
building up	4	digestion		1	make	5	3	unite	1	
carbohydrates	1	disintegration		1	making	(1)	5	uniting	1	
carbons	1	division		5	manufacture	3	1	upward	1	
catabolism	1	dovetailing		1	material	1	urea	2		
cell	1	elaboration		1	mathematics	1	1	vanilla	1	
chemical	(3)	6	elements	(1)	1	M.	1	vital	1	
chemical operation	(1)	1	English	4	medicine	1	1	W.	1	
chemicals	2	ether		1	metabolism	(1)	3	water	3	
chemist	1	ethylene		1	metathesis	1	2	whole	4	
chemistry	(12)	57	F.	1	method	5	1	words	1	
				1	mind	1	1	Wurz method	1	

67. ATHENS.

Individuality Frequency, 56.

Failure Frequency, 0.

acropolis (1)	22	classic	1	Greece (72)	651	pacific (1)	1	Solon (1)	1
ancient	2	classical	2	Greek	23	palace	1	south	1
ancient city	1	columns	1	Greeks	3	Parthenon (1)	21	Spain	1
architecture	2	country	2	Herodotus	1	Paul	6	Sparta (3)	25
Areopagus	1	culture	(1) 10	hill	3	peninsula	2	state	2
Aristotle	1	Diana	1	historical	(1) 12	Pericles	(1) 13	statuary	(1) 1
art	8	dirt	1	history	1	Phidias	1	statutes	1
Athena	1	Doric	1	Homer	1	place	2	study	1
atoms	1	Europe	2	Horns	1	Plato	1	symmetry	1
beauty	2	eye	1	Iowa	1	poetry	1	temple	3
book	1	fall	1	learning	1	Prophylaea	1	Texas	1
building	1	games	1	maid	1	Pyrrhus	2	town	3
bust	1	general	1	Mannott	1	R.	1	university	1
Byron	1	geography (2)	3	Minerva	1	Rome (3)	38	Venice	1
candle	1	Georgia	4	Naples	(1)	ruin	1	Venizelos	1
capital	3	glory	3	nation	1	ruins	3	war	(1) 1
Carthage	1	government	2	Ohio	4	Salamis	1	warrior	1
city	(6) 55	grandeur	1	owls	(1)	sculpture	5	white	1
civilization (1)	1								

68. EPITHELIUM.

Individuality Frequency, 110.

Failure Frequency, (2) 84.

above	1	chitin	(1)	1	episode	1	literature	1	protozoon	1
after	2	cilia	(1)	2	epithalamium	9	low	1	psychology	3
against	1	ciliated	1	epithallium	1	marriage	2	Pygmalion	1	
amphitheater	1	columnar	3	epithelioma	1	mathematics	1	Rome	2	
anatomy	4	connective		epithelium	1	medicine	2	scales	(1) 1	
ancient	4	tissue (1)	1	epithet	(1) 8	membrane (2)	5	science	4	
animal (1)	2	construction	1	epizootic	1	mesoderm	1	scutum	1	
architecture	2	corium	2	E.	1	mesothelium (1)	2	sheet	1	
art	2	cover	(1) 3	erechtreum	1	metal	1	skin (50)	431	
Asia Minor	1	covering	(2) 12	eye	(1) 2	Milton	1	skull	1	
astronomy	4	cuticle	1	fin	1	morphology	1	small-pox	1	
Athens (1)	3	cutis	1	finger nails	1	mortation	1	smell	1	
bark	1	dermis	(1) 2	flesh	1	mouth (1)	5	solar	1	
battle	1	dictionary	1	flower	(1) 1	mucosa	(1)	Spencer	5	
B.	1	down	1	fly	1	mucous	1	squamous	1	
bed	1	duodenum	2	frog	(1) 1	negro	1	stomach	1	
biological	1	ear	2	gland	1	nose	1	submucous	1	
biology (1)	7	earthworm	1	Greece	11	olfactory	1	substance	1	
biozoological	1	ellipse	1	Greek	24	on	1	sun	2	
blank	1	emporium	1	hair	1	outer (2)	3	superficial	1	
blood	1	endoderm (1)	1	hall	1	outside	8	surface	12	
body	8	endothelium	5	hallway	1	palate	1	teacher	1	
bone	2	ephesis	1	hand	1	paracentral (1)	1	temple	2	
botany	5	epic	2	heat	1	pavement	1	theater	(1) 1	
brain	5	epicanthus	1	histology	6	perihelion	1	Thebes	1	
bronchial	1	epicurean	3	hymn	1	perimeter	1	theory	1	
calyx	1	epidermis (1)	17	interior	1	physiology (1)	19	tissue	(5) 37	
cancer	3	epidural	1	intestine	1	pithy	1	tongue	1	
carcinoma	1	epigastrum	1	Latin	3	place	1	top	1	
cell (8)	34	epigram	1	layer	3	plant	1	trachea	1	
cells (7)	28	epigrammatic	1	leaf	2	poetry	2	trillium	1	
cell-tissue	1	epilepsy	2	light	1	problem	1	upon	3	
cellular	1	Epimetheus	1	lining	10	protection (1)	2	W.	1	
ceremony	1	epiphilial	1	lip	1	prothallium	1	zoology	3	
chemistry	3									

69. FEUDALISM.

Individuality Frequency, 113.

Failure Frequency, 2.

abolish	1	ancient (1)	15	aristocracy	2	barbarism	10	capitalism	(1) 2
absolutism	1	ancient history	1	armament	(1) 1	barbary	1	caste	1
A.	2	(1)		armor	7	baron	(8) 40	castle	(5) 39
ages	3	ancient laws	1	attempt	1	barons	(4) 25	castles	(1) 6
agrarian	1	antique	1	autocracy	1	beneficent	1	cavalier	1
anarchism	1	antiquity	1	barbarians (1)	1	bloodshed	1	Central Europe	1
anarchy	2	arbitrary (1)	1	barbaric	1	bosses	1	chains	1

Charlemagne	2	force	1	lord	(2)	29	patron	1	social	(1)	1	
C.	1	France	15	lords	(4)	27	pauperism	1	socialism	1		
chivalry	(5)	39	futile	1	love	1	peace	1	society	4		
church	2	Gaul	1	man	1	people	2	south	1			
condition	3	German	2	manor	6	period	1	Spain	2			
country	1	Germany	(1)	16	master	1	politeness	1	Sparta	(1)	2	
Crecy	1	government	(3)	23	mediaeval	(4)	78	politics	1	state	4	
creed	1	Guizot	1	mediaevalism	12	poverty	1	strife	7			
Cromwell	1	gun	1	men	1	power	3	stupidity	1			
crusade	(1)	history	(5)	70	Mexico	1	rebellion	1	swords	1		
crusades	2	homage	1	middle ages	(6)	46	regime	1	system	(1)	18	
drak	3	injustice	1	military	1	religion	1	Tennessee	1			
drak ages	(1)	inquisition	(1)	1	moat	2	Renaissance	3	tenure	1		
democracy	(2)	4	institution	1	monarchism	(1)	1	republicanism	1	time	2	
dependent	1	Ireland	1	monarchy	(1)	5	Richard	1	tournaments	1		
disturbance	1	Ivanhoe	1	monastician	(1)	3	rifle	1	tribe	(1)	1	
dues	1	Japan	(1)	4	monks	1	right	1	tyranny	2		
dukes	1	John	1	nation	1	romance	2	tyrant	1			
early	1	Kaiser	1	nobility	1	R.	1	tyrants	1			
England	(2)	51	Kentucky	1	noble	(1)	2	Rome	1	vandal	1	
English	3	king	2	Norman	(1)	4	royalty	1	Vandalism	3		
Europe	(2)	24	King Arthur	2	Normans	1	rule	1	vassal	4		
extinct	1	King Richard I	1	nuisance	1	Russia	1	vassalage	1			
farmer	1	kings	2	old	1	Scott	3	vassals	2			
federalism	1	knight	(4)	40	old English	1	serf	(3)	Venice	1		
feud	1	knighthood	(1)	10	history	1	serfdom	2	voting	1		
feudal	(1)	1	knights	(4)	25	oligarchy	1	serfs	(2)	walls	1	
feuds	2	K.	(1)	1	oppression	4	servitude	(1)	1	war	(1)	27
few	1	land	5	pageantry	1	slave	4	wars	1			
fief	(2)	5	law	(1)	7	party	(1)	1	slavery	(3)	20	
fight	3	light	3	1	past	1	slaves	3	William the	1		
fights									Conqueror	(1)	1	

70. COEFFICIENT.

Individuality Frequency, 114.

Failure Frequency, 11.

a.	1	cypher	1	freshmen	1	numbers	(1)	9	small	1	
absorption	1	decimal	1	friction	(1)	13	numeral	2	small figure	1	
accompanying	2	deficient	1	front	1	numerator	1	small number	1		
action	1	degree	1	function	(1)	1	of	1	square	2	
adhesion	(1)	1	denominator	1	geometry	13	one	1	statistics	1	
algebra	(5)	147	differential	(2)	3	gonorrhoea	1	partition	1	steel	1
algebraic	3	diffusion	1	grammar	4	Pearson	(1)	4	studying	1	
analysis	(1)	1	digestibility	1	gravity	1	Pearson's	1	sufficient	2	
angle	(1)	3	digestion	(1)	2	heat	5	percentage	1	suffix	1
annex	1	digression	1	help	1	phenol	(1)	2	supplement	1	
annual	1	disinfectants	1	hydraulics	1	physics	(1)	4	symbol	(1)	
arithmetic	25	division	4	hyphen	1	place before	1	1	tangent	(1)	
before	4	divisor	2	hypotenuse	1	play	1	15	temperature	2	
binomial	6	education	1	increase	1	polynomial	(1)	1	term	(1)	
binomial		efficiency	4	index	(1)	10	power	7	tetrahedron	1	
theorem	1	efficient	(2)	13	inefficient	4	preceding	3	theorem	1	
biometrics	1	elasticity	2	integer	2	prefix	(1)	3	thermal	(1)	
brass	1	energy	3	isosceles	1	probability	1	1	thesis	1	
business		English	1	Latin	2	problem	1	1	three	2	
administration	1	equal	14	letter	1	proportion	1	1	3.1416	(1)	
calculations	(1)	1	equality	2	letters	1	psychology	2	together	1	
calculus	2	equation	(1)	11	linear	3	quotient	1	1	triangle	(1)
coagulate	1	equivalent	(1)	1	literal	1	radical	5	trigonometry	(1)	
coequal	1	error	2	logarithm	1	ratio	1	1	two	6	
college	1	evolution	1	mathematical	1	ration	1	1	united	1	
company	1	example	1	mathematics	(7)	refraction	6	6	unknown	1	
comparison	2	expansion	(16)	110	mechanics	1	relation	(1)	5	urinalysis	1
completion	1	exponent	(7)	61	modification	2	relationship	(1)	1	value	1
conjunction	1	extemporaneous	1	modifying	1	respiration	1	1	variability	(1)	
connection	1	extraction	1	multiple	1	respiratory	1	1	variation	(2)	
cooperation	1	factor	14	multiplicand	1	restitution	1	1	W.	1	
cooperative	1	figure	(4)	21	multiplication	3	result	2	whole	(1)	
corallin	1	figures	4	multiplier	(3)	8	root	2	with	1	
corollary	(1)	1	figuring	1	multiply	(1)	3	1	words	1	
corporation	1	fire	1	n.	1	science	1	1	x	2	
correlation	(8)	44	formula	(1)	1	nine	1	1	x ²	(1)	
correlative	2	fraction	(2)	25	noun	2	sentence	1	1	zero	1
cosine	2	fractions	2	number	(9)	73	sine	1			

71. PERENNIAL.

Individuality Frequency, 112.

Failure Frequency, 6.

adjective	1	daily	(1)	2	frequent	5	parents	1	skeleton	1	
age	1	dandelion	(1)	1	fruitage	1	parsnip	1	spring	7	
ages	1	dawn		2	government	1	peas	2	stream	1	
almanac	1	day		1	grateful	1	perennium	(1)	study	1	
always	(7)	24	decennial	2	green	(1)	3	perimeter	2	summer	1
anatomy	1	diurnal		1	growth	2	period	1	sun	1	
animal	(1)	2	diurnally	1	habitual	1	periodic	1	temporal	1	
annual	(27)	208	early	1	hardy	(1)	7	permanent	2	temporary	3
annually	2	edge		1	herb	(2)	3	perpetual	7	thistle	1
annus	1	election		1	herbaceous		1	Petunia	(1)	through	1
around	1	enduring		1	history		1	phlox	1	throughout	3
autumnal	1	ephemeral		1	Horace		1	plant	(8)	throughout	1
beauty	1	eternal	(2)	10	immortal	(1)	1	plants	(4)	the year	1
beet	1	eternally		1	irrigation		1	poetry	1	time	(3)
biennial	(4)	35	eternity	(1)	1	Kaiser	1	post-prandial	1	together	1
blight	1	eternity	(1)	1	larkspur		1	prince	1	tree	(2)
bloom	1	ever	(1)	5	lasting	(1)	10	prolonged	(1)	trees	(1)
botanical	1	ever-blooming	(1)	1	Latin		2	pyrene	1	triennial	1
botany	13	evergreen		3	law		1	Pyrenees	1	tropics	1
brain	2	everlasting	(1)	35	leaf		1	quadrennial	1	twice	1
brass	1	everywhere	(1)	1	long		1	recurrent	1	two	1
calendar	1	every year		1	lord		1	recurring	5	two ears	1
ceaseless	1	exterior		1	many		2	regular	1	weather	1
cedar	1	father		2	mathematics		1	regularly	1	weeds	1
centenary	1	fir		1	momentary		1	religion	2	wig	1
centigenerian	1	flood		1	mountains		1	rhythmic	1	winter	2
century	1	floral		1	nerve		1	root	(1)	word	1
coming again		flower	(2)	43	nocturnal		1	rose	1	world	1
and again	1	flowering		1	oak		1	round	1	year	(2)
constant	(2)	6	flowers	(5)	often		4	safety	1	yearly	(9)
continual	4	forestry		1	old		3	season	(1)	years	13
continually	2	forerunner		1	once		1	seasonal	4	youth	4
continued	(1)	1	forever	(1)	25	parent	1	seasons	2	youthful	1
continuous	3	foxglove		1	parental		1				

72. PLEBEIAN.

Individuality Frequency, 121.

Failure Frequency, 2.

73. CATALYTIC.
Individuality Frequency, 168.

Failure Frequency, 111.

abnormal	1	cataleptic	43	dictionary	1	hard up	1	platinum	(3)	19
abrupt	1	catalepton	1	dietetics	1	hasten	1	pleasant	1	
acatalytic	3	catalogue	(1)	disaster	3	hastening	1	Poe	1	
accelerating	(1)	catalysis	(1)	disastrous	1	haziness	1	poetry	2	
acceleration	(1)	catalyzer	2	disease	3	heat	1	Popocatepetl	1	
accident	(2)	cataapult	4	dissociation	1	help	(1)	precipitate	(1)	1
action	(9)	cataract	1	dissolution	1	helper	1	precipitation	(1)	1
activator	1	catastrophe	10	disturbing	1	helping	1	process	(2)	11
activity	1	catatonic	4	divide	(1)	Hindu	1	psychology	(1)	1
aged	1	catechism	4	division	1	hydrolytic	1	rapid	1	
agency	3	category	1	dog	1	hyperbola	1	reaction	(5)	21
agent	(5)	caterpillar	(1)	down	7	hypnotic	1	reagent	(1)	2
agents	1	cathode	(1)	downfall	2	hypnotism	(1)	reversal	1	
aid	3	Catholic	3	downward	1	hysteria	1	rhetoric	1	
anabolic	6	Catholicism	1	drugs	1	influence	2	Rome	1	
anabolism	1	Catiline	(1)	earthquake	4	insanity	1	ruin	1	
anacatalytic	1	catnip	1	effect	2	ions	(1)	science	5	
analysis	4	cat-o-nine-tails	1	electric	3	kata-	1	scientific	1	
analytic	(13)	cattle	3	electrical	1	katabasis	1	shock	1	
analytics	2	change	10	electricity	(2)	kill	1	sleep	2	
ancient	1	changing	2	energy	1	kitten	1	sleepy	1	
apart	2	chaos	1	enzyme	(7)	Latin	1	slow	1	
apocalypse	1	chasm	2	enzymes	1	line	1	smash	1	
assistance	1	chemical	7	epilepsy	3	L.	(1)	solution	2	
assisting	(1)	chemical action	1	epileptic	9	magnesium	1	spasmodic	1	
association	1	chemical process	2	epileptics	1	managese	2	speed	(2)	5
atacatalytic	1	(1)		episode	1	manganese	1	spells	2	
attraction	1	chemical reaction	1	evolution	1	dioxide	2	spirit	1	
attractive	1	(1)		explosion	2	M.	1	spontaneous	1	
autocatalysis	1	chemistry	(11)	eye	2	mathematics	1	stalagmites	1	
awful	1	chew	1	fall	2	medical term	1	starter	(1)	1
biology	2	chlorophyll	1	falling	2	medicine	1	state	(1)	5
body	1	church	1	falling down	1	metabolic	(1)	stiff	1	
brain	1	collection	1	falls	1	metabolism	2	still	1	
break	(1)	compact	1	ferment	3	militance	1	stimulation	1	
breakdown	(1)	condition of		ferments	1	negative	1	stimulus	1	
breaking	4	the earth	1	filter	(1)	nonsense	(1)	stirring	1	
breaking up	1	connected	1	fire	1	nothing	1	stroke	1	
build	1	consciousness	1	fit	24	origin	1	study	1	
builder	1	contact	(1)	fits	13	O.	(2)	substance	1	
building	(1)	cotillion	1	flood	1	ova	1	synthetic	2	
cab	1	cows	1	flower	1	oxidasis	1	tearing		
Cadillac	1	crazy	1	force	2	oxidation	1	down	(1)	2
calyx	1	current	1	foreign	1	oxygen	(1)	terrible	1	
capacity	1	cutting	1	form	1	ozone	1	together	2	
cat	6	daughter	1	F.	1	palsy	1	trance	(1)	3
catabolic	1	decay	1	function	(1)	patient	1	tube	1	
catabolism	1	decomposition	1	future	1	peculiar	1	universal	1	
cataclysm	(1)	37	derivation	1	galls	1	person	2	upheaval	2
cataclysmic	4	destroy	4	general	2	physician	1	velocity	(1)	2
catacombs	1	destruction	(1)	9	geology	2	physics	(1)	versification	1
catalepsis	4	destructive	(1)	15	gold	1	physiology	1	without	1
catalepsy	10	diaphragm	1	Greek	6	pillar	1	yawning	1	

74. EMBRYO.
Individuality Frequency, 93.

Failure Frequency, 3.

adult	(4)	8	baby	(3)	29	born	1	city	1	ego	1
ambassador	1	bacteriology	1	botanic	1	cleavage	1	elementary	1		
amnion	1	bean	(1)	5	botany	4	cocoon	1	embellish	1	
amoeba	(1)	begin	1	bottle	2	corn	2	embrace	1		
amphioxus	1	beginning	(1)	117	boy	1	course	2	embryological	(1)	1
analysis	1	beginnings	(1)	5	boys	1	curled	1	embryology	(3)	26
anascarca	1	biology	(1)	47	brain	2	cytology	1	embryonic	3	
anatomy	1	bird	2	bud	1	development	(5)	17	evolution	2	
animal	9	birth	(2)	23	cell	(4)	22	dog	1	evolve	1
ante	1	blastula	1	chart	1	early	4	F.	1		
anthropology	1	body	9	chick	(6)	ectoderm	2	first	5		
atom	1	bone	1	chicken	13	egg	(10)	60	fish	(1)	6
babe	1	bones	(1)	1	child	(2)	31	eggs	1	flower	5

foetal	(1)	2	invertebrate	1	new	3	premature	1	starting	1
foetus	(10)	52	jar	1	newly born	1	primitive	2	state	1
form		8	J.	(1)	1	nuclues	7	protoplasm	1	structure
formation		2	kid		1	ontogeny	2	protozoa	2	text-book
formative	1		kitten	1	organism	(1)	3	psychology	1	theory
frog	1		laboratory	(1)	3	origin	(1)	6	rats	1
fundulus	1		larva	2	original		1	reproduction	4	tissue
generation	1		L.	1	ova	2	sac	3	toad-fish	2
genesis	1		life	(3)	27	ovary	1	science	1	unborn
germ	(4)	45	little	1	ovum	4	section	1	undeveloped	7
germination	1		man	(2)	7	paleontology	1	seed	21	unfinished
Greek	1		M.		1	pallium	1	size	1	unformed
growing	1		matter		1	parasite	1	slide	1	uterus
growth	11		medicine	3	person	1	small	(1)	vertebrate	1
head	(1)	2	minuteness	1	physiological	1	snake	1	womb	(2)
histology	1		mitre	1	physiology	7	spore	2	worm	1
hormone	(1)	1	morphology	2	pig	(1)	7	sporont	1	young
human	(2)	15	M.	1	placenta	1	sprout	1	youth	3
hygiene	1		mother	3	plant	6	stage	2	youthful	1
infant	(2)	9	museum	1	plantlet	(1)	1	start	1	zoology
interest	1		neural	1	possible	1				(2) 21

75. SPECTRUM.

Individuality Frequency, 62.

Failure Frequency, 1:

analyses	1	diffraction	1	line	1	purple	1	spectator	2	
analysis	(24)	94	dispersion	1	lines	(2)	6	radium	1	
apparatus		1	division	1	looking		1	rainbow	(4)	
arc	2	divisions	(1)	1	mercury		1	ray	34	
astrology	1	eclipse		1	microscope		3	rays	(1)	
astronomy	4	examination		1	mirror		1	read	4	
band	1	eye		8	M.		1	rectum	8	
band of color	(1)	1	figure	1	Newton	(1)	2	red	1	
bands	1	Fraunhofer		2	oculist		1	refraction	(2)	
bars	1	ghost		1	optician		1	refraction	3	
biology	1	ghosts		1	optics		1	sun	(5)	
blue	(1)	5	glass	(2)	26	orange	1	sunlight	47	
brain	1	green		1	petrography		1	thesis	1	
bright	2	human		1	photograph		1	science	1	
Bunsen	2	inspect		1	physics	(3)	51	urine	1	
card	(1)	1	instrument		2	physiology		1	variegated	1
chart	1	iron		1	pigment		1	violet	1	
chemistry	(1)	6	laboratory		1	polariscope		1	violet rays	1
color	(16)	179	lecture		1	prism	(3)	29	sky	1
colors	(3)	130	lens	3	psychology		1	sodium	(1)	
crystal	1	light	(18)	206			1	solar	3	
							1	spectacle	17	
							1	spectacles	4	
							1	waves	(1)	
							1	X-ray	1	
							1	visible	(1)	
							1	vision	1	
							1	waves	1	
							1	zoology	1	
							2	Zurich	1	

76. CONTINENT.

Individuality Frequency, 53.

Failure Frequency, (1) 1.

abstainer	(1)	1	content	1	geography	(3)	47	mass	1	six
Africa	(2)	25	contents	2	geology		1	moon	1	size
America	(18)	206	continence	1	Gibraltar		1	mountain	2	South America
American		4	continual	1	globe	(2)	7	nation	3	space
area	(1)	2	continuity	2	government		1	North America	45	sphere
Asia	(1)	37	continuous	1	half world		1			stars
Atlantis		1	contrive	1	hemisphere	(4)	10	ocean	(2)	strand (1)
Australia	(1)	18	countries	2	impotent		1	oceans	2	subdivision
bigness		1	country	(2)	incontinent		3	peninsula	5	territory
birth		1	definition	1	island	(28)	90	physiography	1	theorum
body		2	division	3	islands		1	religion	1	United States
bound		1	earth	(1)	land	(12)	156	restraint	2	Utica
candy		1	England	1	land-mass		1	same	1	vast
cape		1	Europe	(6)	large	(1)	12	science	(1)	war
complete		1	European	(1)	largeness		2	sea	7	water
connected		1	expanse	1	largest		1	section	1	western (1)
conscience	(1)	1	extent	1	lost		1	shape	(1)	whole
conscious		1	federal	1	Magellan		1	shelf	1	wide
contain		1	fibers	1	map	(2)	32	shore	2	world
contained		1	geographical	1						

77. SPORE.

Individuality Frequency, 123.

Failure Frequency, 21.

Africa	2	cocci	1	gamete	1	mushrooms	(1)	2	spear	1
agamogenesis (1)	1	composer	1	generation	1	nucleus	1	speck	2	
algae	1	coral	1	George	1	organism	1	sperm	(1)	
algebra	1	covering	1	germ	(7)	ova	1	spermatozoa	2	
amoeba	3	cryptogam	1	germinate	1	part	(1)	sphere	1	
anatomy	1	cryptogram	1	germination	2	perennial	1	spike	1	
animal	5	cryptograms	1	green	1	phrase	1	spine	1	
anthrax	2	develop	1	growth	3	picker	1	splore	1	
arm	1	difficulty	1	gymnaspore	2	pig	1	Spohrfieder	1	
bacilli	1	door	1	H.	1	pine	2	spoke	1	
bacillus	4	dot	1	hand	1	plant	(10)	sponge	6	
bacillus	1	dots	1	hole	(1)	plants	(2)	sporadic	11	
subtilis (1)		dry	1	hoof	1	pollen	(4)	sporangium	3	
bacteria (8)	31	dust	(2)	hunting	1	pollywog	1	sporophite	1	
bacteriology	10	egg	20	impalpable	1	pond	1	sporophyll	1	
bacterium (1)	6	eggs	4	imperfection	1	pore	(1)	sporozoa	1	
ball	5	element	1	individual (1)	1	powder	1	sporozoon	2	
bearing (2)	4	elephant	1	indusium	1	prickle	(1)	sport	10	
beginning	4	embryology	3	infusoria	1	process	1	spot	1	
biology	47	encapsulated	1	insect	1	projecting	1	stem	2	
biophore	1	equisetum (1)	3	invertebrate	1	propagation	1	tetanus	(1)	
bit	1	explore	1	jelly	1	protozoa	3	trace	(1)	
black	2	fermentation	1	jelly fish	1	Pteris	1	track	5	
blood	1	fern	(12)	Latin	1	reproduction	(2)	tracks	2	
body	1	ferns	87	leaf	1	Rome	1	trail	1	
boor	1	fertilization	1	life	5	roommate	1	tree	2	
bore	1	fish	16	little	1	round	(1)	tube	1	
botany (2)	51	flagellum	1	low life	1	round body	1	unicellular life	1	
breathing	1	flower	(3)	lycoperd	(1)	sac	1	unit	1	
bred	1	flowers	6	medusa	1	scale	(1)	water	1	
bred	1	foot	1	megaspore	1	science	5	whole	1	
bud	(1)	form	2	microbe	1	seed	(16)	wind	(1)	
bug	(1)	formation	1	milk	1	skin	3	worm	1	
bugs	2	forming	2	minute	(1)	sleep	1	yeast	8	
burst	2	frog	1	moss	3	small	(1)	young	2	
case	2	frogs	1	mould	11	smallness	1	zoology	18	
cedar	1	frond	1	moulds	1	snow	1	zoophite	1	
cell (5)	31	fruit	1	movement	1	source	1	zoospore	1	
cells	1	fungi	3	mucor	1	South Africa	1	zygote	1	
circle	1	fungus	(1)	mushroom	(3)	spa	1			

78. THEOREM.

Individuality Frequency, 67.

Failure Frequency, 4.

abstract	(1)	2	demonstrate	1	imaginary	(1)	2	physics	1	
algebra	(2)	64	demonstration (3)	6	imagination	1	pons asinorum	1	tarlagtia	
algebraic	2	diagram	1	indices	1	postulate	(1)	3	Taylor's (1)	
all	1	equality	1	interrelation	1	practical	1	teacher	1	
analysis	1	equation	(1)	10	italics	(1)	1	theater	3	
answer	1	established	1	law	3	practice	(1)	theme	1	
arithmetic (1)	8	Euclid	(2)	7	L.	2	principle	(1)	whole	
Avogadro	1	example	4	lessons	1	problem	(3)	theocracy	1	
axiom (1)	8	exercise	1	line	1	proof	(4)	theology	(1)	
belief	1	explanation	2	logic	(1)	22	5	theorize	1	
binomial (15)	123	fact	1	M.	1	proposition	(8)	theory	(3)	
biology	1	false	1	mathematics	(9)	60	34	thesis	1	
blackboard	2	fierce	1	maxim	2	Pythagoras	3	thinking	1	
book	2	first	1	maximum	2	Pythagorean	2	third	1	
calculation	1	formula	1	memorized	1	question	1	thought	2	
calculus	4	generalization	1	mutation	1	rule	5	triangle	(1)	
cause	1	geometric	(1)	1	nebular	1	school	3	triangles	1
chemistry	2	geometrical	4	Newton	(1)	1	science	2	trigonometry	(1)
conclusion	1	geometry (26)	327	notion	2	1	sentence	(2)	1	truth
condition	1	guess	2	old	1	2	Spinoza	1	two	4
connote	1	H.	1	original	1	1	square	1	version	1
conundrum	1	hypothesis	(3)	32	π	1	1	statement	8	words
corollary	(2)	11	idea	(1)	5	1	1	study	1	work
						1	1	supposition	1	

79. HIMALAYA.
Individuality Frequency, 67.
Failure Frequency, 2.

A.	1 climbing	1 goat	1 island	3 pen	1
aeroplane	1 cocoanut	1 goats	1 islands	1 peninsula	2
Africa	1 cold	2 Greece	2 isthmus	1 Pike's Peak	1
Allegheny	1 continent	1 haemolysis	2 Kim	1 plant	1
Alps	4 country	(1) 5 hard	1 Kipling	2 Popocatepetl	1
altitude	1 distant	1 Hawaii	(1) 1 L.	1 rabbit	3
Andes	3 elevation	1 Hayti	1 land	1 race	1
A.	1 enamel	(1) 1 height	13 L.	1 range	(1) 5
Ararat	(1) 1 Europe	2 hiems	1 large	1 rocks	1
Asia	(6) 61 Everest	(4) 15 high	(1) 4 Malay	1 Russia	1
beauty	1 F.	1 highest	3 map	2 snow	(1) 11
bees	1 folding	1 Hindu	1 mountain (33) 307	snow caps	1
black	1 foreign	1 Hindustan	(1) 2 mountains (31) 367	space	(1) 1
blackberry	1 Ganges	1 H.	1 Mount Everest	6 state	1
blood	1 geography	(1) 12 hymn	1 Oceanica	1 steep	1
Buddhism	1 giants	1 hymnology	1 natives	1 sublime	1
B.	(1) 1 gigantic	1 hymns	1 Nepal	1 Thibet	7
Carpathian	1 girl	1 India	(12) 78 nigh	1 volcano	1
China	(1) 4 glacier	1 Indus	(1) 1 peaks	(1) 4 white	1

80. RENAISSANCE.
Individuality Frequency, 116.
Failure Frequency, 1.

age	(1) 13	education	6 history	(9) 70	new birth	(2) 4	review	1	
ages	1	Egypt	1 Holland	1	newness	1	revival	(1) 21	
ancient	1	Elizabethan	1 hotel	1	nothing	1	revolution	(2) 2	
antiquity	1	England	3 Italian	(1) 25	old	3	Richelieu	1	
architecture	(1) 17	English	8 Italians	1	painting	(1) 13	rings	1	
art	(8) 89	enlightenment	2 Italy	(13) 86	paintings	2	rising	1	
arts	1	epoch	2 kings	1	Paris	1	R.	(1) 2	
awakening	(2) 15	era	4 knighthood	1	Pater	1	rococo	(1) 1	
barbaric	1	Erasmus	2 lace	(1) 12	period	(6) 77	romanticism	2	
bas relief	1	Europe	(2) 20	late	1 Petrarch	(1) 4	Rome	1	
beginning	2	European	(1) 1	1 Latin	1 philosophy	2	Savonarola	2	
birth	(2) 9	fascinating	1 learning	(2) 34	picture	(1) 2	school	1	
book	(1) 1	feudal	1 lecture	1	poet	1	sculpture	1	
books	1	feudalism	(1) 2	Leonardo	3 poetry	(1) 3	Shakespeare	6	
Botticelli	1	fifteen hundred	1 Leonardo	1	poets	1	soldiers	1	
brightness	1	fifteenth	1	DaVinci	1 Portugese	1	Spanish	1	
building	1	fifteenth century	1	letters	(1) 2	previous	1	spelling	(1) 2
buildings	(1) 2	Florence	6	life	1 printing	(1) 2	Spinoza	1	
cathedral	2	Fontainebleau	1	literary	1 procession	(1) 1	spirit	1	
Catholicism	1	fourteen hundred	1	literature	38	progress	1	Symonds	(1) 5
Cellini	1	fourteen	1	literature	Rabelais	1	text book	1	
centuries	1	fifty-three	1	and art	1 Raphael	(1) 4	theory	1	
century	2	France	(4) 74	L.	1 rebirth	(3) 13	thought	1	
Cervantes	1	freedom	1	Luther	(1) 7	reborn	2	time	4
change	4	French	(1) 25	luxury	1 recollection	1	Titian	2	
church	1	French	1	Machiavelli	1 reconstruction	1	twelve hundred		
Cimabue	1	Revolution	1	1	recovery	2	A. D.	1	
class	1	furniture	(1) 1	map	1 reform	2	upheaval	1	
classics	1	Galileo	(1) 2	Matthew Arnold	1 Reformation	(2) 22	Valla	1	
Caleb	1	genetic	(1) 1	mediaeval	16	Reformation	(2) 22	Velasquez	1
Columbus	1	Germany	2	mediaevalism	(1) 1	reign	1	Voltaire	1
culture	7	Giotto	1	Michael Angelo	8	rejuvenation	1	Walter Pater	3
Dante	9	Giottesque	1	(2)	1	Rembrandt	2		
dark ages	1	gothic	4	middle ages (5) 14	1 renascence	1			
date	1	G.	1 Milton	1	1	war	1		
Da Vinci	(2) 5	Greece	(1) 2	monks	1 renewal	9	writers	1	
development	(1) 1	Greek	1 movement	1	1 republic	(1) 1	writing	1	
dolily	1	growth	1	music	1 restoration	(1) 1	writings	1	
early	(1) 2	Heidelberg	1	Napoleon	1 resurrection	1	year	1	
			1 new	(1) 7	1 retrograde	1	youth	1	

81 QUOTIENT.
Individuality Frequency, 52.
Failure Frequency, 0.

addition	(1) 4	brother	1 deficient	1 divisible	1 equator	1
algebra	(1) 15	calculating	1 denominator	(1) 4	division	(16) 267
answer	(1) 41	machine	1 difference	1 divisor	(26) 152	equivalent
answers	1	carbon	1 divide	(3) 14	end	example
antecedent	1	coefficient	(1) 14	dividend	(3) 67	factor
arithmetic	(7) 117	cosine	1 dividing	5	equal	5
arithmetical	1	cotangent	1 divider	1	equality	3
				equation	1 figure	(1) 2
					1 figures	4
					4 figuring	(1) 1

finish	1	mathematics (5) 35	part	(1)	4	ratio	4	tangent	2
fraction (5)	29	measurement 1	portion	1	1	recollection	1	tests	1
fractions	6	multiplicand (2)	predicate	1	1	relation	1	theory	1
geography	1	multiplication	problem	2	2	remainder	11	third	1
geometry	4	(2)	product	(4)	31	remaining	1	together	1
grammar	1	multiplier (1)	purity	1	1	respiration (1)	3	total	1
indicator (1)	1	multiply	Q.	1	1	respiratory (2)	3	two	1
language	1	multiplying	question	1	1	result (2)	40	under (1)	1
less	1	number (3)	quorum	1	1	school	5	vision	1
line (1)	1	numbers (1)	quota	2	2	sign	1	whole (1)	1
many	1	numerator	quotation	1	1	subtraction (1)	3	write	1
mathematical	1	outcome (1)	quote	(1)	1	sum (1)	10		

82. OXIDATION.

Individuality Frequency, 98.

Failure Frequency, 4.

acid	2	consumption	2	geology	1	new life	1	reaction (3)	5	
acids	1	copper (1)	6	gold	1	nitrate (1)	1	red (1)	4	
action	2	crystals	2	gun metal	2	nitric acid	1	reducing	1	
agent	1	dark	1	heat	8	nitrogen (1)	4	reduction (13)	88	
air (1)	40	decay	1	H ₂ O ₂	1	occident	8	R.	1	
analysis	3	decomposition	1	hydrate	1	occidental	5	respiration (1)	1	
atmosphere	1	dehydration (1)	4	hydration	(1)	6	operation	1	result	1
automobile	1	deoxidation (1)	3	hydrogen	(2)	13	orient	3	rocks	1
black	2	desiccation	1	ionization	1	oriental	2	rust (11)	74	
blackening	1	destroy	1	iron (1)	37	orientation	5	rusting	4	
blood (1)	11	destruction	1	iron rust	1	oxalic	2	science	4	
botany	1	dew	1	jewelry	1	oxide	7	scientific	1	
brass	2	dietetics	1	killing	1	oxidize	5	sewage	1	
breaking up	1	digestion	1	knife blade	1	oxygen (17)	132	sidereal	1	
break up	1	dissociation	1	laboratory	4	ozone	1	silver	17	
breath (1)	2	division	1	Lavoisier	1	peroxidize	1	steel	1	
breathing (1)	6	dry	1	layer (1)	1	peroxide	1	strangulation	1	
bubbling	1	earth	1	lead	1	petrify	1	sulphur	1	
burn	12	east	3	life (1)	3	physics	6	sun	1	
burning (8)	82	electrolysis	1	light	3	physiology	5	sunlight	1	
carbon (1)	6	energy	1	liquefaction	1	potassium	1	tanks	1	
carbonization	1	European	1	liquefy	1	P.	1	tin	1	
catalytic	1	evaporation	1	L.	1	Priestley	1	tissue	3	
cell	1	experiment	1	lungs	1	process (3)	24	union	1	
cells	1	exposure	1	mathematics	1	processes	1	ventilation	3	
change	8	fermentation	1	medicine	1	products	2	vigor	1	
chemical (1)	9	fire (2)	19	metabolism (1)	1	progress (1)	1	water (1)	13	
chemicals	2	fitters	1	metal	4	purification	3	welding	1	
chemistry (15)	130	fizz	1	metals	2	purse	1	west	3	
color	1	flame	(1)	2	mineralogy	1	putrefaction (1)	1	western	1
combine	1	food	3	muscle	1	putter	1	yeast	1	
combustion (1)	10	foundation	1	neutralization	1	rain	1	zinc	(1) 2	
conflagration	1	gas	(2)	10						

83. HAEMOGLOBIN.

Individuality Frequency, 85.

Failure Frequency, 71.

active	1	Choctaw	1	globular	2	homogeneous	2	physiology (3)	19	
adrenalin	1	classroom	1	globule	4	hospital	1	plant	1	
advertisement	1	coagulate	1	globules	2	humility	1	plasma	1	
agglutination	1	coagulation	1	gluttonous	1	hymen	1	pollywog	1	
albumen	1	color	7	goblins	1	hymeneal	1	protein	1	
amoeba	1	coloring	1	G.	1	incomplete	1	protoplasm	1	
anaemia	1	corpuscle (1)	12	Greek	1	ion	1	quinine	1	
analysis	1	corpuscles (1)	4	green	1	iron (1)	7	red (4)	25	
anatomy	2	crystals	1	haematin	1	jelly	2	scale	1	
animal	2	deviation	1	haematite	1	laboratory	1	science	6	
assimilation	1	dietetics	2	haematococcus	1	leaf	1	scientific	2	
B.	1	doctor	1	haematorphyrin	1	lecture	2	serum	2	
beef juice	1	drop	1	haemoglobinometer	2	leucocytes	1	shape	1	
biology (1)	16	element	1	haemoglobinometer	light	1	smell	1		
black pill	1	entomology	1	1	meat	1	stain	3		
blood (84)	619	fat	1	haemolysis	1	medicine	10	substance	3	
blood-curdling	1	fibrin	1	half	5	milk	3	Sunday papers	1	
blood substance	1	figure	1	half globe	1	nutrition	1	Tallquist	2	
body	2	fluid	2	hemisphere (1)	15	orange	1	teacher	1	
botany	3	food	5	hemispherical	1	organic	1	test	4	
brain	1	German	3	hemorrhage	2	O.	1	tuberculosis	1	
carbon dioxide	1	germs	(1)	1	heterogeneous	1	oxygen	3	winter	1
cell	2	ghost	1	Himalaya	1	oxyhaemoglobin	1	world	1	
chemical	3	glauben	1	Himalayas	1	(1)	yellow	1		
chemicals	1	globe	9	H.	1	philosophy	1	yolk	2	
chemistry (1)	17	G.	1	home	1	physics	1	zoology	3	
chlorophyll (1)	2									

84. AXIOM.

Individuality Frequency, 76.

Failure Frequency, 4.

accident	3	demonstration	1	idiom	4	precept	1	statement	(2)	14
adage	1	easy	3	immortality	1	principle	(2)	straight		1
algebra	(1)	29	epigram	1	Kant	2	problem	2	sure	3
answer	1	equal	1	know	1	proof	(6)	surety		1
apparent	2	equals	2	knowledge	1	proportion	1	task		1
a priori	1	equivalent	1	known	2	proposition	(1)	teacher		1
argument	(1)	1	established	1	law	12	prove	(1)	ten	2
arithmetic	(2)	7	Euclid	(1)	line	1	proved	1	text book	3
assumption	4	evidence	2	logic	(1)	7	proverb	7	theology	1
axe	3	evident	5	mathematics	(4)	35	q. e. d.	1	theorem	(15) 85
A.	1	example	2	maxim	(1)	3	quotation	1	theory	(2) 15
axiomatic	6	explanatory	(1)	meaning	1	reason	(1)	thought		1
axis	4	expression	1	morals	1	rhythm	1	trigonometry	(1) 2	
axle	1	fable	1	motto	3	right	1	trite		2
belief	1	fables	1	mottoes	1	rule	(1)	true	(1)	15
book	1	fact	(1)	naturally	1	same	1	truism	(1)	8
B.	1	figures	1	noun	1	sane	1	truth	(17)	223
B.	1	first	1	obvious	(1)	2	saying	(1)	two	1
certain	2	fundamental	3	old	1	self evident	16	understood		1
certainty	1	geometrical	1	one	(1)	2	Seneca	1	undisputed	1
class	1	geometry	(22)	209	paradigm	1	sentence	1	vaccination	1
coagulate	1	grammar	2	perimeter	1	short	1	variation	(1)	1
common	(1)	1	granted	2	philosophy	3	simple	1	verb	1
commonplace	2	hard	1	phrase	3	simplicity	1	word		1
conclusion	1	H.	(1)	plain	1	six	1	worth		1
corollary	14	hunger	1	Pope	1	stability	1			
correct	(1)	3	hypothesis	1	postulate	(7)	30			

85. AMAZON.

Individuality Frequency, 81.

Failure Frequency, 0.

Africa	1	club	1	Greeks	1	negro	(1)	South America	60		
A.	1	Colonel Roosevelt	1	gulf	1	Nile	2	(6)			
Alps	1	colored	2	Hippolyte	3	ocean	2	South American	1		
amazement	1	coon	1	histor	4	Orinoco	1	statue	(1)	4	
America	(1)	2	distant	1	Homer	1	pampas	1	stone	(1)	1
amethyst	1	dress	1	horizontal	1	Pankhurst	1	stream	(1)	1	
Andes	1	ding	1	horse	1	para	(1)	strength		5	
ancients	1	fair	1	horses	1	parrot	(1)	strong		4	
animals	(1)	1	female	(1)	huge	2	Parthenon	(1)	suffragette	(2)	4
arm	1	fight	1	Iliad	1	Penthesilea	2	tall		1	
Asia	1	fighter	1	Indian	2	person	1	Teddy		1	
battles	1	fighters	1	island	1	Pinero	2	trees		1	
B.	1	fighting	1	jungle	1	powerful	2	valley		2	
belt	1	fine	1	lady	5	queen	6	vegetation		1	
big	6	flowing	1	large	7	race	3	waitress		1	
B.	1	forest	2	Latin	1	riding	1	Wallace	(1)	1	
black	1	F.	1	longest	1	river	(54)	war		1	
Bohemian	1	fresh water	1	lovely	1	rivers	2	warlike		1	
brave	(1)	2	geograph	7	maiden	1	Roosevelt	(2)	warrior	(1)	7
brazen	1	giant	1	mighty	1	sculpture	1	water		2	
Brazil	(7)	49	giantess	1	missionary	1	sexless	(1)	woman	(12)	212
bronze	1	girdle	1	Mississippi	1	ship	1	women	(1)	27	
Bruenhilde	2	Goethe	1	mountain	1	size	3	zone		1	
burlesque	1	Greece	(2)	mythology	3	soldier	1				
cannibal	1	Greek	2								

86. ISOSCELES.

Individuality Frequency, 35.

Failure Frequency, 6.

acid	(1)	1	equal	(9)	63	geometry	(3)	35	like	1
acute	(1)	1	equal angle	1	Greek	3	mathematics	4	square	1
Aeschylus	1	1	equality	4	height	1	point	1	stately	1
algebra	1	1	equal-legged	1	hexagon	1	pointed	1	Theocritus	1
angle	1	1	equal-sided	1	Holmes	1	pyramid	2	three	2
angles	1	1	equiangular	(1)	2	icicle	2	Pythagoras	1	triangle (81) 811
angular	1	1	equilateral	11	isoderm	1	rectangle	1	triangles	4
balanced	1	1	Euclid	1	isomerism	1	rectangular	2	triangular	1
blackboard	1	1	even	3	isometric	1	roof	1	trigonometry (2) 3	2
chemistry	1	1	figure	2	large	1	same	(1)	two	2
drawing	1	1	generalization	(1)	1	legs	1	scalene	3	

87. COHESION.

Individuality Frequency, 111.

Failure Frequency, 3.

absorption	1	coapt	1	forces	2	médicine	1	society	1		
addition	1	coefficient	1	friction	2	mercury	1	solid	1		
adhere	(1)	10	coercion	1	fusion	2	metals	1	sore	1	
adherence	(3)	11	cohabitare	1	gathering	1	molasses	5	stagnation	1	
adhering	4	cohere	1	geology	1	molecule	6	stamp	4		
adhesion	(27)	274	coherence	(1)	2	glass	5	molecules	(1)		
adhesive	2	coherent	(1)	6	glue	(2)	31	mucilage	(2)		
adnation	1	collection	1	glueing	1	mud	(1)	10	stick	(6)	
affinity	(1)	1	combination	1	gluey	1	occlusion	1	stickiness	(3)	
aggregation	(1)	1	coming together	1	great	1	operation	2	sticking	(13)	
agreement	1	community	1	gum	2	opposed	1	plaster	1		
amalgamation	1	compact	1	hang	1	particle	1	sticking together	7		
apart	1	confusion	1	hang together	1	particles	(1)	stick-to-it-iveness	2		
atom	(1)	1	connection	3	hatred	1	parts	5	stickum	1	
attach	2	contract	1	heat	3	paste	1	sticky	6		
attracting	1	cosmic	1	hold	2	phenomenon	1	strength	4		
attraction	(5)	17	diffraction	(1)	1	holding	2	stringent	1		
binding	(1)	1	diffusion	2	illustration	1	physics	52	stuck	1	
biology	1	disassociation	(1)	1	incoherent	1	physiology	2	substance	1	
blackboard	1	drops	1	intestines	1	plaster	7	tape	1		
block	1	ear	1	join	(1)	plates	1	themes	1		
blood	4	efferent	1	joining	2	power	1	tight	1		
brass	1	elastic	1	juxtaposition	1	protrusion	1	together	(2)		
bump	1	emphasis	1	Latin	1	pull	2	tube	1		
capillarity	(1)	1	exclusion	1	L.	1	uniformity	1	union	(1)	
capillary	2	expansion	(1)	5	life	1	unit	13	unit	1	
cement	1	experiment	1	logic	1	repulsion	3	unite	1		
chalk	1	fast	(1)	1	magnet	1	rubber	1	uniting	1	
chemistry	(1)	18	fastened	1	magnetic	1	same	1	anity	3	
cling	1	fate	1	magnetism	1	science	2	viscosity	1		
clinging	4	firmness	2	marriage	1	scientific	1	water	(1)		
close	1	fixation	2	mass	1	separation	1	wax	(1)		
coagulate	1	fixed	1	materials	(1)	3	shave	1	welding	1	
coagulation	2	force	(6)	19	matter	(1)	2	skull	1	wireless	(1)
coalesce	1				5	5	1	with	1		

88. PROTOPLASM.

Individuality Frequency, 109.

Failure Frequency, (1) 5.

albumen	(1)	8	cells	(4)	16	evolution	2	infinitesimal	1	nitella	1	
alive	1	1	cell sap	1	first	(1)	7	irritability	1	nitrogen	(2)	
amoeba	(9)	77	cellular	1	F.	1	jelly	(5)	54	nothing	1	
analysis	(1)	1	chasm	1	flesh	(2)	9	jelly-fish	2	nucleus	7	
anatomy	2	chemistry	(2)	2	fluid	(2)	8	knife	1	number	(1)	
ancient	2	child	1	foam	(1)	1	leaves	1	organism	(2)		
animal	(3)	14	chlorophyll	1	food	3	life	(14)	142	origin	5	
animals	2	chromosome	2	form	2	life matter	1	original	1	oyster	1	
atheism	1	clear	1	formation	1	liquid	2	origins	1	paleontology	1	
atom	1	colloid	1	former life	1	living	6	paste	1	philosophy	1	
baby	1	colorless	1	gelatin	1	living matter	1	physical	1	physiology	12	
bacteriology	1	complex	1	gelatinous	3	lower	1	plant	(2)	plants	6	
basis	1	constituent	1	germ	13	mass	8	plastidule	1	plasma	1	
beginning	9	C.	1	germinology	1	material	2	prehistoric	1	plaster	1	
beginnings	2	cytoplasm	2	germ plasma	1	matter	16	primary material	1	plastic	1	
biology	(4)	80	cytoplasma	1	G.	1	medicine	1	plastidule	1	plasma	1
bioplasm	(1)	1	Darwin	5	globule	1	membrane	1	prehistoric	1	plastidule	1
blood	(2)	51	divinity	1	glue	1	metabolism	(1)	primary material	1	plastidule	1
bloody	1	division	1	granules	1	metazoon	1	primeval	1	plastidule	1	
body	(1)	6	drawing	1	gray	2	microscope	(1)	primitive	6	plastidule	1
botany	10	earth	1	green	1	minute	1	plastidule	1	primordial	1	
brain	1	egg	(2)	9	green leaves	1	molecule	1	prehistoric	1	primordial	1
bromide	(1)	1	elemental	1	growth	(1)	move	1	primary material	1	primordial	1
bugs	1	elementary	(1)	3	haemoglobin	1	movement	1	primeval	1	primordial	1
carbon	1	embryo	2	histology	2	muscle	1	primitive	6	primordial	1	
cataclysm	1	embryology	2	human	2	mush	1	prehistoric	1	primordial	1	
cell	(14)	91	endoderm	1	Huxley	(1)	5	mussy	1	prehistoric	1	
cell-life	1	environment	1	inert	1	myxomycete	1	prehistoric	1	prehistoric	1	

protean	1	science	3	sperm	1	tiny	1	water	3
proteid	(1)	5 serum	1	squashy	1	tissue	6	Weismann	(1)
protein	(1)	7 simple	(1)	5 starch	2	transparent	1	wetness	1
protozoa	(1)	16 skin	3	sticky	2	tree	1	white	3
protozoon	(1)	11 slime	(1)	2 S.	1	unknown	1	work	1
pseudopod	1	slimy	(1)	1 structure	3	viscous	2	worm	1
psychology	2	small	1	stuff	(1)	2 vitalists	1	woze	1
pulp	1	soft	3	substance	(3)	31 wabbly	(1)	1 zoology	21
sap	1	somoplasm	(1)	1 term	1				

89. CENTRIFUGAL.

Individuality Frequency, 80.

Failure Frequency, 0.

acceleration	1	creamy	1	heart	1	outward	(2)	4	sling	1	
action	(1)	cream separator	2	heat	1	paddle	1	1	speed	5	
analysis	1	curve	1	hold	1	perimeter	1	1	sphere	2	
apparatus	1	dairy	1	hold together	1	peripheral	1	1	spinning	2	
approach	(1)	diagram	1	hundred	1	physics	(1)	42	stone	2	
astronomy	1	driven	1	hundredth	1	planetary	1	1	string	3	
attraction	2	earth	(1)	hydraulics	1	power	2	1	sugar	1	
away	(1)	eccentric	2	illustration	1	precipitate	1	1	swinging	1	
axiomatic	1	experiment	1	in	1	pull	2	2	swirling	1	
axle	1	flank wheel	1	inward	3	pulling	1	1	tangent	2	
biology	1	fleeing	3	jump	2	pump	(2)	4	tangential	1	
blood	1	flight	2	light	1	rapidity	1	1	throw	1	
body	2	fly	6	machine	(6)	revolution	1	1	top	1	
center	36	flying	(5)	17	machinery	1	revolving	2	2	toward	1
center force	1	flying off	1	mathematics	1	ring	1	1	turn	1	
central	7	flying out	(1)	1	mechanics	1	rotating	1	1	turning	1
"centrif"	1	fly wheel	1	middle	1	rotation	(2)	7	universe	1	
centrifuge	(1)	force	(33)	448	milk	2	round	3	1	up	1
centripetal	(27)	forces	2	misnomer	(1)	1	science	1	1	urine	1
churn	1	forward	1	motion	(3)	13	sediment	1	1	water	1
circle	12	from	2	movement	(1)	1	seeking the		1	wheel	(3)
circular	(1)	fugue	1	mud	1	center	1	1	whirl	(1)	
circumference	3	geometrical	1	neurones	1	separate	1	1	whirling	(3)	
concentrate	1	gravitation	3	off	1	separation	1	1	working	1	
converging	1	gravity	(1)	2	out	(1)	3	separator	(1)	5	world
cream	2	grindstone	1	out from	1						

90. MOLECULE.

Individuality Frequency, 62.

Failure Frequency, 3.

air	1	compression	1	invisible	(1)	1	object	1	smallest	
amoeba	4	corpuscle	1	ion		6	oxygen	1	smallness	
analysis	(1)	1	diminutive	1	ions	1	oyster	1	small particle	
animal	(1)	6	division	2	iron	(1)	1	part	7	speck
animals	1	dot	1	law	(1)	1	particle	(8)	32	specks
atom	(47)	463	drop	1	life	2	particles	2	sphere	(1)
atoms	13	dust	2	little		12	philosophy	1	spot	
attraction	2	dynamic	1	mass	2	physics	(1)	38	stone	
ball	(1)	2	election	(2)	3	matter	(3)	34	structure	
beginning	1	element	4	microscope		1	plant	2	substance	
big	1	enzyme	1	minimum	1	playful	1	sugar		
biology	10	expansion	1	minute	(1)	6	point	(1)	tension	
blood	2	fathom	1	minuteness	2	pollywog	1	theory		
body	(1)	5	fish	1	mole	(1)	2	portion	(1)	
botany	1	force	1	molecular	(1)	6	protein	2	tiny	
brain	1	form	2	molecular weight	1	protoplasm	3	two		
brick	1	gas	(1)	1	moles	1	science	1	ultimate	
carbonic acid	(1)	1	germ	3	mollusc	(2)	8	scientific	1	uncutable
cell	3	granule	(1)	1	mollycoddle	3	simple	1	unit	
chemistry	(10)	84	hypothesis	2	molybdenum	1	single	1	units	
circle	1	hypothetical	1	motion	2	size	2	vortex		
combination	(2)	3	imaginary	(1)	1	mouse	1	small	(5)	
composition	1	infinitesimal	4	number	(1)	1	small atom	90	water	
compound	1					1	small atom	1	zoology	

91. COTYLEDON.

Individuality Frequency, 91.

Failure Frequency, (1) 139.

analysis	1	chlorophyll	1	flower	(8)	86	mammoth	1	prehistoric	1	
anatomy	1	class	1	flowers	9	maple	1	root	(1)	1	
angiosperm	(1)	cochineal	1	fluid	1	mathematics	1	round	1		
animal	1	coddle	1	food	1	medical	2	science	3		
bean	(8)	76	collodium	2	F.	1	medicine	2	seed	(13) 92	
beans	(2)	8	colloid	1	Galveston	1	mollycoddle	1	seed leaf	1	
biology	(1)	7	colloids	1	geology	(1)	1	monocotyledon	3	seedling	(1) 4
blade	1	colytic	(1)	1	geometry	(1)	4	monocotyledonous		seeds	2
bone	1	conifer	1	germination	1			8	shell	(1) 2	
botanical	4	connective	1	grease	1	nothing	1	side	1		
botany	(8)	105	corn	5	Greek	3	oil	4	sided	1	
bud	1	cotillion	2	green	1	one	1	skeleton	1		
butter	4	cottage	1	ground	1	page	2	species	(1)	1	
butterfly	1	cottolene	13	half	2	part	(1)	1	spore	1	
cardboard	1	cotton	(1)	11	halves	1	pea	(1)	3	spreading	1
cart	1	cotton seed	2	hypocotyledon	1	petal	2	spring	1		
carthage	1	cotton wood	1	ignorance	1	physiology	1	stem	1		
cartilage	(1)	8	cow	1	infant	1	pine	1	substance	1	
cat	(1)	1	darkness	1	jar	2	pine tree	1	sugar	1	
cataclysm	1	die-	(1)	1	kernel	1	pistil	(1)	1	teacher	1
catalytic	1	dicotyledon	(1)	24	lard	6	piston	1	technical	2	
catastrophe	1	dicotyledonous	2	lard bucket	1	placenta	2	temerity	1		
Catiline	4	dictionary	2	leads	1	plant	(24) 131	tendon	1		
Caucasus	1	difficult	1	leaf	(12)	59	plants	(1)	8	tree	4
cauterize	1	embryo	(1)	6	leaves	(1)	12	plumule	2	two	(1) 6
cell	(1)	3	embryology	1	life	2	pollen	1	T.	1	
Ceylon	1	endogenous	1	lily	(1)	1	polycotyledon	2	young plant	1	
chemical	1	eye	1	lima bean	1	polyhedron	1	Yser	(1)	1	
chemistry	(1)	6	figure	3	linen	1	powder	1	zoology	2	

92. ABSCISSA.

Individuality Frequency, 98.

Failure Frequency, (1) 107.

abscess	(2)	65	chart	(1)	2	division	(1)	1	mathematics	(4) 48	psychology	2
abscission	1	charting	1	1	divisions	1	measurement	1	queen	1		
absence	4	charts	(1)	2	drafting	1	measuring	1	scale	1		
absent	5	Charybdis	1	1	drawing	2	medical	2	schism	1		
absinthe	6	chasm	2	1	equation	1	medicine	2	science	3		
absorb	1	chirurgery	1	1	expansion	1	molasses	1	scientific	1		
abstract	1	circle	(1)	4	expectation	1	monissa	1	scissors	5		
abyssmal	1	classroom	1	1	figure	(1)	3	name	2	separation	3	
abyss	6	coefficient	1	1	flower	4	narcissus	3	sister	1		
Abyssinia	4	college	1	1	from	1	nature	1	S	1		
Abyssinian	1	comet	1	1	function	(1)	1	number	2	sore	1	
across	2	conic	1	1	geometric	(5)	47	obsession	2	space	1	
Africa	1	coordinant	(1)	3	geometry	1	opening	1	square	1		
algebra	11	coordinate	(6)	40	grammar	1	ordinal	1	squares	3		
analytic	1	coordinates	(1)	6	graph	(3)	22	ordinant	4	statistics	4	
analytic	4	country	2	1	graphics	1	ordinate	(31) 182	surd	1		
geometry	1	crevice	1	1	graphs	(1)	1	ordinates	(1)	tangent	2	
analytics	(1)	cross	2	1	height	1	oval	(1)	1	technical	1	
angle	1	cross section	1	1	hiss	1	parabola	2	theorem	2		
angles	1	curve	(5)	14	history	1	parallel	1	titrate	1		
apart	1	cut	(1)	13	horizontal	2	part	(1)	2	tooth	1	
arithmetic	6	cutting	(1)	9	hospital	1	perpendicular	1	tracing	1		
astronomy	1	departure	1	1	hyperbola	4	physics	5	trans	1		
axes	(1)	3	depth	1	hypotenuse	3	physiology	2	triangle	(4) 29		
axis	5	Descartes	(1)	1	incisor	1	pipsissewa	1	trigonometry	47		
bacteriology	(1)	1	description	(1)	1	index	1	plane	1	trite	1	
base	3	diagram	(1)	3	insect wing	(1)	1	plant	1	under	(1) 1	
biology	1	diagrams	1	1	language	1	plasmolysis	1	upright	1		
botany	4	diameter	1	1	Latin	3	pleasure	1	vertical	2		
bottom	1	dictionary	2	1	length	(1)	2	plot	4	x	1	
brain	1	dimension	1	1	line	(15)	66	plotting	2	x axis	2	
brother	1	direction	1	1	lines	3	point	3	x + y	1		
calculus	3	directrix	1	1	logarithm	3	points	2	y axis	1		
Cartesian	2	distance	(1)	3	logarithms	1	positive	1	zenith	1		
characteristic	1	divide	1	1	mantissa	3	proboscis	1	zero	1		

93. GRAVITATION.

Individuality Frequency, 81.

Failure Frequency, 2.

action	1	draw	1	gravity	(1)	30	momentum	1	settling	1
aerial	1	drawing	2	gravy	1	motion	1	sex	1	
apparatus	1	drop	5	ground	1	move	1	solids	1	
apple	(2)	19	dropping	1	heavy	8	nature	1	specific	2
astronomy	1	dyne	1	height	1	N.	1	speed	1	
attraction	(6)	34	earth	(15)	107	hill	1	Newton	(18)	187
aviation	1	equator	1	Holt's Ledge	1	pedestal	(1)	1	square	(1)
balance	1	erg	1	hope	1	physical	2	stone	(1)	6
ball	(1)	5	exhortation	1	hydrometer	1	physics	(6)	66	subtraction
bodies	1	experiment	1	inertia	1	physics	1	sun	(1)	3
body	1	fall	(4)	39	insoluble	1	experiment	1	swing	1
B.	1	falling	(6)	46	(Sir) Isaac	1	pole	2	system	1
bullet	1	falling body	1	(Sir) Isaac	1	power	5	theory	(2)	12
car	1	feather	1	Newton	1	process	1	power	32.2	
center	(1)	7	force	(7)	146	law	(4)	1	tire	1
centrifugal	3	formula	1	laws	2	pull	(3)	21	tumble	1
centrifuging	1	fraction	1	levitation	2	pulling	2	unfailing	1	
clinostat	1	g.	(2)	2	magnet	2	repulsion	1	unit	2
C.	1	generalization	1	magnetism	2	resistance	1	units	1	
constant	(1)	4	geography	2	mass	(4)	2	rolling	1	velocity
converging	1	globe	(2)	2	matter	6	root	1	volume	1
Darwin	1	grave	2	mercury	1	scale	1	water	2	
declivity	1	gravid	(1)	1	method	1	science	2	weighing	1
descent	1	gravimetric	3	molecular	(1)	1	scientific	1	weight	(7)
down	(1)	9	gravitate	(1)	2	secret	1	world	68	1
downward	4					1	separation	1		

94. GALVANIC.

Individuality Frequency, 58.

Failure Frequency, 6.

action	(3)	14	energy	3	heat	1	metals	1	stimulation	3
apparatus	1	equator	1	instrument	3	meter	3	storm	1	
attraction	2	experiment	(1)	1	iron	36	motor	1	strong	4
bath tub	1	explosive	1	Italy	2	needle	2	structure	1	
batteries	(1)	1	Faraday	2	jar	1	physics	28	tank	2
battery	(28)	253	faradic	(3)	7	jerk	1	power	10	Texas
bottle	1	force	(1)	53	jump	1	press	1	theory	5
bright	1	French	1	laboratory	(1)	1	pressure	9	thermometer	1
burn	1	frog	(3)	12	law	2	process	2	tin	7
cell	(7)	56	frogs	3	life	1	psychology	1	Titanic	1
cells	(1)	1	Galileo	(1)	1	lining	1	psychrometer	1	tub
chemistry	9	Galton	1	live	1	1	rapid	1	tube	1
coil	(1)	1	Galva	2	machine	2	reaction	1	twitch	1
copper	2	Galvan	1	machinery	2	reactions	1	vanguard	1	
current	(11)	75	Galvani	(1)	9	magnet	2	reflex	2	vats
currents	2	galvanize	10	magnetic	2	2	roof	1	vessel	1
d'Arsonval	1	galvanized	2	magnetism	1	1	schoolroom	1	volcano	2
discharge	1	galvanometer	10	man	(1)	2	science	1	volt	2
dynamic	3	galvanoscope	3	mechanics	2	2	shock	(2)	9	Volta
electric	(6)	46	Galveston	6	mercury	1	1	1	(2)	4
electrical	4	G.	2	metabolism	1	1	sinusoidal	1	voltaic	(1)
electrical cell	(1)	1	great force	1	metal	5	1	1	1	4
electricity	(24)	179	hard	2	metallic	1	static	3	voltmeter	1
						1	steel	1	wire	1
								1	zinc	4

95. LOGARITHM.

Individuality Frequency, 92.

Failure Frequency, 1.

abscissa	1	cosine	(1)	2	hate	1	Naperian	2	series	1		
algebra	(3)	47	curve	2	higher	1	natural	1	sine	(2) 5		
analysis	(1)	1	decimal	(1)	8	mathematics	1	nine	1	slide rule	2	
analytics	1	decimals	1	Holman's tables	1	number	(10)	56	S.	1		
anti-logarithm	(1)	2	deduction	1	index	(1)	2	numbers	(3)	solution	1	
arithmetic	34	differentiation	1	infinity	1	page	1	per cent	1	speed	1	
base	3	difficult	2	Japanese	1	part	2	physics	1	square	2	
bird	1	difficulty	1	J.	2	per cent	1	study	2	sum	1	
blackboard	2	divide	1	K.	1	P.	2	surveying	2	symbol	(1) 1	
black book	1	D.	1	labyrinth	1	P.	1	table	(16) 18	system	1	
book	(5)	53	e.	1	Latin	1	plane	1	tables	(2) 38	table	1
books	1	easy	1	L.	1	power	(4)	8	tangle	1	theory	1
B.	(1)	2	element	1	L.	1	powers	1	together	1	theorem	1
C.	1	engineering	1	lobster	1	principle	1	transcendental	1	triangle	1	
calculate	1	Euclid	1	log	2	problem	(1)	ten	(1) 2	trigonometry	223	
calculation	7	examination	1	logarithm table	1	problems	1	(15)		trouble	1	
calculus	4	exponent	(1)	12	log-chain	1	progression	1	useless	1	stamen	1
catalogue	1	exponential	1	1	logic	1	proof	1	Weber's law	1	stamens	1
C.	(1)	1	F.	1	longitude	1	reciprocal	1	vacate	1	stem	1
chemistry	1	figure	3	L.	1	root	(1)	1	waxen	1	stone	1
coefficient	1	figures	(3)	24	mantissa	3	rotten	1	wound	1	substance	1
college	1	formula	1	1	manual	1	row of figures	1	tapeworm	1	tapetum	1
cologarithm	2	function	(1)	1	M.	1	rule	59	tooth	2	top	1
column	2	geodesy	1	mathematics	115	plant	(9)	1	triangle	1	triangle	1
common	1	geometry	(1)	36	(11)	plants	7	plants	1	unknown	1	
complicated	1	great	1	misery	1	point	2	point	1	vacate	1	
computation	(3)	7	hard	2	multiplication	5	pollen	5	violet	2	rose	1
correlation	1	hardships	1	Napier	(8) 26	powder	1	1	waxen	1	root	1
						quandary	1	1	wound	1	ranunculus	1
						name	1	1	yellow	1	nasturtium	1
						odor	1	1		1	odor	1
						onyx	(1)	1		1	outer	1
						science	1	1		1	part	1
						seed	(1)	1		1	sepal	1
						sepals	(2)	8		1	sepals	1
						sepals	(1)	3		1	sepals	1

96. CALYX.

Individuality Frequency, 70.

Failure Frequency, (2) 41.

alchemist	1	color	1	K.	1	passion flower	1	shape	1	
anatomy	1	corolla	(22)	132	K.	1	perianth	(1)	shell	1
animal	2	corona	3	K.	(1)	1	petal	(3)	skeleton	1
apples	1	cuneiform	1	kidney	2	2	petals	(1)	skin	1
beautiful	1	crystal	1	larynx	1	1	physiology	1	spiral	1
Bible	1	cup	(1)	12	leaf	1	pink	1	stalk	1
biology	2	curve	2	lily	9	9	pistil	6	stamen	(1) 8
book	1	drill	1	lime	(1)	1	plant	(9)	stamens	(1) 1
botanical	(1)	2	eat	1	lotus	1	1	59	stem	(1) 8
botany	(5)	75	electricity	1	morning glory	1	plants	7	stone	1
bud	1	flower	(41)	464	morphology	1	point	2	substance	1
Calais	1	flowers	(2)	19	mould	1	pollen	5	tapeworm	1
Calef	1	fruit	(1)	1	myths	1	powder	1	tooth	2
Caliph	1	geology	1	name	1	1	quandary	1	top	1
Calixtus	1	geometry	2	nasturtium	1	1	ranunculus	1	triangle	1
Calox	(1)	9	grand	1	nature	1	root	1	unknown	1
catastrophe	1	Greek	2	odor	1	1	rose	1	waxen	1
C.	1	green	6	onyx	(1)	1	1	1	wound	1
Celtic	1	heat	2	orchid	1	1	science	1	yellow	1
chalice	3	helix	2	outer	1	seed	(1)			
chemistry	1	history	1	part	1	1	sepals	(2)		
circle	2	index	2		1	1	sepals	(1)		

97. POLARIZATION.

Individuality Frequency, 132.

Failure Frequency, 6.

acids	1	asters	1	biology	1	cells	(2)	3	cockroach	1	
angle	1	astronomy	3	bodies	1	center	3	cold	4	compass	3
apparatus	(1)	2	atoms	2	body	2	centralization	3	converging	1	
arctic	1	attraction	8	botany	1	changing	1	C.	2	crater	1
arrangement	(1)	1	axis	1	bubbles	1	chemical	1	cockroach	1	
arranging	1	battery	(2)	31	carbon	1	chemistry	(1)	cold	4	
arrow	1	bear	(1)	3	cell	(2)	30	chromosomes	1	compass	3

crosses	1	filings	1	lines	1	physics	(4)	67	sea	1	
crystal	(1)	3	flower	10	liver	1	physiology	1	separation	1	
crystallization	(1)	3	flowers	2	magnet	(2)	27	pistil	1	Shackleton	1
current	(2)	9	focussing	1	magnetic	3	plant	2	spar	1	
currents	1	force	2	magnetism	(1)	26	plants	1	spectroscope	1	
cytology	1	formaldehyde	1	magnetization	1	Polack	1	spectrum	1		
depolarization	1	freeze	1	magnets	1	Poland	1	spindle	1		
dextrous	1	freezing	1	maturat	1	polar	(3)	5	stamen	(1)	1
direction	(1)	3	frigid	1	mercury	1	polar bear	1	star	2	
division	1	G.	1	metal	1	polarimetric	1	starch	(1)	1	
earth	3	geography	2	microscope	(1)	6	polariscope	(1)	6	Steffanson	1
egg	4	glass	(1)	1	mineralogy	1	polarity	1	stick	1	
electric	5	globe	1	mitosis	2	polarized	1	storage	1		
electrical	(1)	3	golf	1	motion	2	pole	16	sugar	(4)	27
electricity	(2)	130	grace	1	movement	2	poles	7	sugars	(1)	2
electrode	2	harmonization	1	moving	1	pollen	3	sun	1		
electrodes	1	heat	2	navigation	1	porous	1	tartaric	1		
electrolysis	2	heavens	1	needle	2	position	2	telescope	(1)	1	
electro-magnet	1	heredity	1	needless	1	powder	1	theory	1		
end	3	hospital	1	negative	(1)	pressure	1	together	1		
ends	(1)	2	hydrogen	3	neutralization	1	prism	4	trigonometry	1	
energy	1	ice	1	Nicol	1	process	1	tube	1		
engine	1	instrument	(2)	4	nitrate	1	psychology	1	turn	1	
eugenics	1	ionization	2	non-polarizable	1	Ramon y Cajal	1	turning	1		
examination	1	iron	1	north	3	(1)	watch	1			
expedite	1	isomerism	1	North Pole	1	red	1	water	1		
experiment	1	laboratory	1	optics	2	refraction	1	weakening	1		
explorer	1	law	1	Peary	3	repetition	1	whiteness	1		
eyes	1	lens	1	perplexity	1	reproduction	1	wind	1		
fat	(1)	1	leptolene	1	phenomenon	(1)	retina	1	yellow	1	
fertile	1	light	(52)	320	philosophy	1	rhomboidal	(1)	Z.	1	
fertilization	5	lily		1	physical chem.	1	science	6			
					(1)						

98. CEPHALIC.

Individuality Frequency, 120.

Failure Frequency, (5) 42.

acid	3	cerebrum	1	form	1	medicine	3	seraphic	2			
action	2	cervical	(1)	1	ganglion	2	medium	1	seven	1		
adjective	2	Charybdis	1	general	1	medullar	1	Sisyphus	1			
anatomy	1	chemistry	1	geology	1	membrane	6	skin	1			
ancient	1	child	2	ghosts	1	mesocephalic	1	skull	12			
androcephalic	1	compression	1	giant	1	microcephalic	1	sleep	1			
angel	1	cranium	1	gland	4	mind	1	slink	1			
angelic	(1)	2	degenerate	1	gonorrhreal	1	neck	1	sociology	1		
animal	2	dictionary	4	good	1	nerve	(1)	sour	1			
anterior	1	difficult	1	Greek	1	nerves	1	sphinx	1			
anthropology	4	diffuse	1	groove	1	neurology	(1)	spinal	1			
ascetic	1	disease	19	growth	1	nomenclature	1	spirits	1			
baby	1	division	1	haziness	1	obstetrics	1	squid	1			
back	1	dog	1	head	(34)	287	occipital	1	stone	1		
belly	1	dolicho-	2	heads	1	person	1	suffice	1			
biology	(1)	4	dorsal	(1)	2	headwards	(1)	sufficient	1			
blind	1	dorso-	1	1	heaven	1	phalanx	1	suffix	1		
body	2	elephantine	1	horse	3	phallic	1	suture	1			
bone	(1)	3	elephants	1	hospital	1	physics	3	sylph	1		
bones	1	embryo	1	hydro-	1	physiology	9	sympathetic	1			
botany	(1)	3	embryology	1	hydrocarbon	1	plant	1	symphony	1		
brachy-	1	embryonic	(1)	1	hydrocephalic	9	podalic	1	synthetic	1		
brachycephalic	4	encephalon	1	hydrocephalus	2	portion	2	syphilis	10			
brain	(18)	112	end	(1)	3	idiot	(1)	syphilitic	2			
brainy	(1)	1	endoccephalic	1	ignorance	1	prognathous	1	syphilization	1		
bucephalus	1	ethnological	1	index	(23)	140	psychology	3	syphon	1		
caliph	(1)	2	eugenics	(1)	1	jaw	1	region	(1)	terrible	1	
ceiling	1	eyes	1	1	large	1	round	2	thorax	3		
centaur	1	fallacy	1	1	lobe	3	sage	1	thought	1		
centipede	1	fallible	1	1	lobster	2	Sapphic	(1)	ulcer	1		
central	3	feet	1	1	man	2	science	9	vein	3		
centripetal	1	finger	1	1	meaning	1	scientific	2	Wassermann	1		
cephalopod	(1)	5	flexure	1	1	measurement	1	sepal	2	white	1	
cephalothorax	2	force	1	1	median	1	sepulchral	1	woods	1		
cephalus	9	forehead	1	1	medical	(1)	3	seraph	1	zoology	(1)	3

99. PROTEID.

Individuality Frequency, 86.

Failure Frequency, 9.

albumen	(3)	30	chemical	1	F.	(1)	1	milk	(1)	7	proteus	1		
amino-acid	5		chemistry	(9)	41	food	(32)	422	molecule	(1)	5	protest	1	
amino-acids	1		C, O, H, N	(1)	1	foods			multiform		1	protoplasm	(6)	
ammonia	1		colloid		2	food stuff			muscle		2	protos	1	
amoeba	1		commission		1	form			mythology		2	protozoa	(1)	
ancient	1		complex		1	formula			Nereid		1	protozoon	1	
animal	3		compound	(1)	6	fried egg			nitrogen	(9)	36	purification	1	
animalcule	1		cookery		1	gland			nitrogenous		7	ration	1	
animals	1		cooking	(1)	1	glutton			nourishment		3	reaction	(1)	
A.	1		corn		2	grain			nucleus		1	salt	1	
backbone	1		diet		6	granule	(1)		nutrient		1	sea	1	
bacteriology	1		dietetics		2	gravy			nutriment		1	serum	1	
bean	3		digestion		2	Greek			nutrition		8	small	1	
beans	(1)	6	dinner		1	grub			ocean		1	starch	(2)	
beef extract	1		early		1	health			organic		1	stiff	(1)	
beginning	1		eat		3	hybrid			organic chemistry	2		stomach	1	
biochemistry	(1)	1	eats		1	hydrocarbon	(1)	3	organism		1	strength	3	
biology	6		economics		1	hygiene		3	peptone		1	stuff	(1)	
birds	1		egg	(4)	18	jelly		1	physics		1	substance	(3)	
blood	1		egg albumen	(1)	1	J.		1	physiology	(1)	8	sugar	4	
body	3		eggs		2	life	(2)	7	polotin		1	T.	1	
botany	4		egg white		1	M.		1	polypeptides		1	thickness	1	
bread	(1)	3	Endymion		1	many	(1)	1	post		1	tissue	1	
but	1		evolution		1	material		1	potato		2	vegetable	1	
carbohydrate	(1)	41	fat		24	matter	(1)	4	potatoes		3	vegetarian	2	
carbohydrates	2		fats		3	meal		1	powder	(1)	3	vegetarianism	1	
carbon	4		first		2	meat	(4)	53	predigested		1	wheat	4	
casein	(1)	1	F.		(1)	2	M.		1	primitive		1	word	1
cell	(1)	3	flesh		1	menu		1	protein	(1)	14	zoology	2	
cheese	3		flour		1	metabolism	(1)	6						

100. KINETIC.

Individuality Frequency, 58.

Failure Frequency, 12.

acting	1		electrical	1	kaleidoscope		1	molecules		1	quick	3	
action	6		electricity	7	kaleidoscopic		1	motion	(11)	60	reaction	2	
active	5		electrons	1	karyokinesis		1	move		1	relationship	1	
activity	(1)	2	energetic	(1)	1	kidney		1	movement	(3)	21	rest	1
association	1		energy	(43)	410	kimono		1	movie		1	science	2
attraction	1		equivalent		1	kindred		1	moving	(1)	8	sensation	3
available	1		fall		1	kinesis		1	muscle		5	skin	1
Canada	1		feeling		1	kinesthesia		2	muscles		1	sound	1
change	1		force	(13)	145	kinesthetic		7	muscular		1	static	(2)
changing	2		forceful		1	kinetoscope		3	½ m v2		2	steam	1
chemistry	(1)	4	function		1	latency		1	phonetic		2	strength	1
cinematograph	1		gas	(1)	3	latent		2	physical		2	sun	(1)
close	1		gases		1	light		3	physics	(5)	46	swift	2
color	2		genesis		1	lively		2	potential	(2)	26	sympathetic	1
Connecticut	6		Giddings		1	machine		1	power		27	technical	2
C.	1		glass		1	mass	(1)	1	powerful		1	theorem	1
doctor	1		heat	(1)	12	mechanic	(1)	1	pressure		1	theory	(11)
dynamic	5		hypothesis		2	mechanics	(1)	6	principle		1	tongue	1
dynamics	1		inertia		1	molecular		4	protoplasm		1	vigor	1
dynamo	1		interesting		1	molecule		1	psychology		4	writing	1

APPENDIX TO THE FREQUENCY TABLES.

1. *Geography*:

- Any term or name in physical geography.
- Any political division in geography.
- Any noted geographical explorer or writer.

2. *Participle*:

- Any term of grammar or syntax.
- Any language.
- Any participle.

3. *Waterloo*:

- Any city in Belgium.
- Any noted military or naval commander in the European armies involved in the Napoleonic campaigns.
- The name or location of any historically important engagement in the world's wars.

4. *Refraction*:

- Any refracting medium.
- Ocular errors of refraction.
- Any optical instrument.
- Any term of optics.

5. *Arithmetic*:

- Any term of arithmetic or algebra.
- Any number.
- Any writing implement or computing device.

6. *Botany*:

- Any botanical term or name.
- Any instrument employed in experimental or other work in botany.
- Any term of agriculture.

7. *Isomerism*:

- Any term of organic chemistry.
- Methods or devices for distinguishing isomers.
- Any substance of a group of isomers or polymers.

8. *Portugal*:

- Any term or name in physical geography.
- Any political division in geography.

9. *Amoeba*:

Any term in biology.

10. *Declension*:

Any term of grammar or syntax.

Any English or foreign word commonly used as an example in the study of declensions.

Any word pertaining to the study of language.

11. *Burette*:

Any word pertaining to technique or apparatus of chemical analysis.

Any substance that is more or less frequently subjected to or used in volumetric chemical analysis.

12. *Physics*:

Any term of mathematics or physics.

Any method or apparatus of the physical laboratory.

Any term of applied physics.

13. *Hyperbole*:

Any term of grammar, syntax, or rhetoric.

Word denoting, or pertaining to, emotional element of expression, or accuracy in expression.

Any term of mathematics.

14. *Retina*:

Any term of nervous anatomy or physiology.

Any term of anatomy, physiology, or pathology of the visual apparatus.

Any term of optics.

15. *Coagulation*:

Any word denoting or implying a transition from a liquid to a solid state or from one of loose to one of more compact aggregation.

Any substance that is commonly subject to such a transition.

Any process, mechanism, or agency that may produce or hinder coagulation.

Any component of blood, egg, milk, muscle or other typically coagulable material.

16. *Cervantes*:

Any word denoting high intellectual distinction.

Any word pertaining to literature or rhetoric.

Any character, custom, sentiment, or principle prominently dealt with in Cervantes' Don Quixote.

17. *Franchise*:

Any term of civics or political economy.

Any general or special designation of an enterprise commonly requiring a government franchise for its organization or maintenance.

Any political division of a country or a state.
 Any population group of a country or a state.
 Any word denoting or implying distinction of class or caste.

18. *Subtraction*:

Any term of arithmetic or algebra.
 Any number.
 Any writing implement or computing device.

19. *Metabolism*:

Any food substance.
 Term pertaining to ingestion, digestion, absorption or assimilation of food or to nutrition in any way.
 Term pertaining to destructive tissue changes and excretion.
 Any organ, system, tissue or fluid of the animal body.
 Any vital function.
 Any medicament, poison, or disease markedly affecting metabolism.
 Any term denoting change or a process of change.
 Any hygienic condition or principle affecting metabolism.

20. *Predicate*:

Any term of grammar or syntax.
 Name of any language.

21. *Mollusc*:

Any term of zoology.
 Any water animal.
 Any body of water or term denoting land connected therewith.

22. *Inquisition*:

Word denoting any form of torture or capital execution.
 Word denoting or implying mediaeval times or institutions.
 Word denoting any judicial authority or procedure.
 Any ecclesiastic term.
 Any word denoting or implying oppression, derogatory qualification or resentment.

23. *Amphibious*:

Any term of zoology.
 Any water animal.
 Any body of water or term denoting land connected therewith.
 Any word pertaining to habits of water life, such as methods of propulsion, etc.

24. *Decimal*:

Any term of arithmetic or algebra.
 Any number.
 Any writing implement or computing device.
 Any term pertaining to currency.

25. *Hydraulic*:

- Any water-way or hydraulic apparatus.
- Any word denoting or implying energy; any apparatus for the production, measurement, transmutation, or transmission of energy.
- Any operation of engineering that may be performed with the aid of hydraulic apparatus.

26. *Osmosis*:

- Any animal, vegetable, or artificial tissue or apparatus prominently involved in phenomena or experiments of osmosis.
- Any general or special name of a substance noted either for marked diffusibility or for indiffusibility through semi-permeable membranes.
- Any biological function prominently dependent on the phenomenon of osmosis.
- Word denoting or implying movement of a fluid substance or permeability of a solid substance.

27. *Percentage*:

- Any term of arithmetic or algebra.
- Any number.
- Any writing implement or computing device.
- Any word pertaining to currency, banking, or commerce.
- Any term of scientific or applied statistics.

28. *Cerebellum*:

- Any part of the nervous system or of the skeleton enclosing it.
- Any function of the cerebellum.
- Any common symptom of cerebellar disease.
- Any pathological process or lesion that may affect the cerebellum.

29. *Fractions*:

- Any term of arithmetic or algebra.
- Any number.
- Any writing implement or computing device.

30. *Titration*:

- Any word pertaining to technique or apparatus of chemical analysis.
- Any substance that is more or less frequently subjected to or used in volumetric chemical analysis.
- Any branch of science or technology in which titration forms a part of the technique.

31. *Carbohydrate*:

- Any food substance.
- Term pertaining to the ingestion, digestion, absorption, or assimilation of food or to nutrition in any way.
- Term pertaining to technique, apparatus, or reagents of food analysis.
- Any organ, system, tissue or fluid of the animal body.

32. *Duodenum*:

Any food substance.

Term pertaining to the ingestion, digestion, absorption, or assimilation of food.

Any organ, fluid, or function of the digestive system.

Any pathological lesion or process that may affect the digestive system; any symptom of such a lesion or process.

Any medicament or therapeutic procedure commonly employed in the treatment of disorders of the digestive system.

33. *Cosecant*:

Any term of geometry or trigonometry.

34. *Biology*.

Any term of biology.

The name of any institution of learning.

Any animal or plant.

35. *Odyssey*:

Any character in the Homeric poems.

Any term of literature.

The name of any writer or locality of ancient Greece or Rome that is of historical importance.

36. *Vertebrate*:

Any term of zoology.

Any animal.

Any term pertaining to the vertebrate skeleton.

Any division of the body characteristic of a vertebrate organism.

37. *Gravimetric*:

Term pertaining to technique or apparatus of chemical analysis.

Any substance that is more or less frequently subjected to or used in gravimetric chemical analysis.

Any unit or system of weight measure.

38. *Federal*:

Any high office or department of the federal government.

Any country.

Any word denoting federation or union.

The name of a president of the United States.

Any organization of whose charter or corporation name the word "federal" forms a part.

39. *Morphology*:

Any word denoting or implying a pathological condition.

Any term of biology, anatomy, or physiology.

Any term of anatomic technique or apparatus.

40. *Hypothenuse*:

Any term of geometry or trigonometry.

41. *Magellan*:

Any country, continent, or ocean.

Any term of navigation or of geography.

Any geographical explorer of historical importance.

42. *Hexameter*:

Any term of rhetoric.

Any noted poet or poem.

43. *Meteor*:

Any term of astronomy.

Any word descriptive of a meteor, its composition, movements or effects.

44. *Momentum*:

Any word denoting or implying an act or means of motion or of sudden arrest of motion.

45. *Cornwallis*:

Any military term or term of warfare.

Any word referring to a scene or incident of the prominent campaigns in the American revolution.

The name of any personage of historical importance connected with the latter colonial times, the revolution, and the early years of the Union.

46. *Protozoon*:

Any term in biology.

Any disease produced by a protozoon.

47. *Syntax*:

Any term of grammar or syntax.

Word pertaining to the study of language.

Any language.

48. *Distillation*:

Any operation or phenomenon of which distillation forms a part or which forms a part of distillation.

Any apparatus which is used in distillation.

Any substance which is more or less commonly subjected to distillation or manufactured with the aid of distillation.

Any chemical or technological operation which may be employed, like distillation, for the purification or separation of substances.

49. *Pollen*:

Any term of botany.

Any agency that commonly serves for transference or dissemination of pollen or seeds.

Any term pertaining to reproduction of biologic organisms.

50. *Peninsula*:

- Any term or name in physical geography.
- Any political division in geography.

51. *Binomial*:

- Any term of mathematics.

52. *Crustacean*:

- Any term of zoology.
- Any water animal.
- Any body of water or term denoting land connected therewith.

53. *Bonaparte*:

- Any military term or term of war fare.
- Any noted military or naval commander in the European armies involved in the Napoleonic campaigns.
- Any word referring to a scene or incident or the prominent features of the Napoleonic campaigns.
- Word expressing or implying esteem or commendation of any kind, or lack of it.

54. *Meridian*:

- Any geometric, trigonometric, or astronomic term more or less frequently employed in geography.
- Any country, prominent city, or term in physical geography.
- Any term of navigation.
- Any apparatus of navigation or astronomy.
- Any division of the diurnal cycle.

55. *Chlorophyll*:

- Any plant, part of a plant, or plant constituent.
- Any term of botany.

56. *Tetrahedron*:

- Any term of geometry.
- Any substance commonly met with in crystalline form.

57. *Madagascar*:

- Any term or name in physical geography.
- Any political division in geography.
- Any tropical animal, plant, or commercial product.
- Any term of anthropology.

58. *Corolla*:

- Any flower or part of one.
- Any flowering plant.
- Any color.

59. *Ventral*:

- Any organ or region of the animal body.
- Any animal.
- Any term of anatomy.

60. *Belgium*:

- Word obviously referring or pertaining to the war of 1914-1919.
- Any European country.
- Any Belgian colony.
- Any city in Belgium.
- Any personage prominently connected with Belgian history, science, literature, or art.

61. *Tangent*:

- Any term of geometry or trigonometry.
- Word denoting or implying contact or proximity.
- Word denoting or implying an act or means of rapid motion.

62. *Dorsal*:

- Any organ or region of the animal body.
- Any animal.
- Any term of anatomy.

63. *Colloid*:

- Any colloid substance.
- Word denoting or implying a transition from a liquid to a solid state or from one of loose to one of more compact aggregation.
- Any animal, vegetable, or artificial tissue or apparatus prominently involved
- Any substance that is commonly subject to such a transition.
in experiments of osmosis.

64. *Equator*:

- Any geometric, trigonometric, or astronomic term more or less frequently employed in geography.
- Any term of physical geography or meteorology.
- Any country or prominent city situated within or near the tropics.
- Any tropical animal, plant, or commercial product.
- Any term of anthropology.
- Any term of navigation.
- Any apparatus of navigation or astronomy.

65. *Judiciary*.

- Any term of law, civics, or penology.
- Any political division of a country or a state.
- The name of any prominent judge.

66. *Synthesis*:

- Any product of synthetic chemistry.
- Word denoting or implying a transition from a lower to a higher degree of complexity.

67. *Athens*:

- Any word pertaining to the history, art, philosophy, or science of ancient Greece.
- Any noted city of ancient Greece, Rome, Egypt, or Judea.
- Any personage of importance in the history of ancient or modern Greece.
- Any character in Greek mythology.

68. *Epithelium*:

- Any organ, region, or tissue of an animal or plant.
- Any characteristic anatomical or chemical constituent of epithelial organs.
- Any variety of epithelium or epithelial cells.
- Any term of anatomy.
- Any animal or plant.
- Any secretion or excretion.
- Any lesion of skin or mucous membrane.

69. *Feudalism*:

- Any term of civics or political economy.
- Any word denoting or implying distinction of class or caste.
- Word denoting or pertaining to mediaeval times, historical incidents, or institutions.
- Any word denoting or implying oppression, derogatory qualification, or resentment.
- The name of any personage or place of historical importance connected with mediaeval times.
- Any military term or term of warfare.

70. *Coefficient*:

- Any algebraic symbol.
- Any natural phenomenon the law of which is more or less commonly expressed by a mathematical formula.
- Any term of mathematics.
- Any number.
- Word in any way pertaining to scientific or applied statistics.

71. *Perennial*:

- Any word involving the concept of time.
- Any term of botany.

72. *Plebeian*:

- Any term of civics or political economy.
- Word denoting or implying distinction of class or caste.
- Word denoting or pertaining to the times, historical incidents, or institutions of ancient Rome or Greece.
- Word denoting or implying oppression, derogatory qualification, or resentment.
- The name of any personage or place of historical importance in connection with ancient Rome or Greece.
- Any military term or term of warfare.

73. *Catalytic*:

Word denoting or implying chemical activity or an act or means of initiating or hastening chemical activity.

Any term of chemistry.

74. *Embryo*:

Any word denoting or implying age.

Any term of biology.

Any animal or plant.

75. *Spectrum*:

Any term of optics.

Any apparatus or reagent used in spectrum experiments.

Any color.

76. *Continent*:

Any term or name in physical geography.

Any country.

Any noted geographical explorer or writer.

77. *Spore*:

Any term in biology.

Apparatus, technique, or material of any branch of experimental biology.

Word denoting or implying size, appearance, or consistency.

Any spore bearing animal, plant, or bacterium.

78. *Theorem*:

Any term of geometry or trigonometry.

79. *Himalaya*:

Any term or name in physical geography.

Any country.

Word denoting or implying elevation, means of elevation, or process of elevation.

Any animal or plant.

80. *Renaissance*:

Word denoting or implying mediaeval times or institutions.

Any word denoting liberation, emancipation, enlightenment, or approving qualification.

Word denoting or implying the spirit of progress as contrasted with that of conservatism.

Any European nationality, country, or important city.

Any branch of literature, art, science, or civic or economic activity.

Any personage of historical importance from the times of early Italian Renaissance to those of the French revolution.

Any social institution markedly affected by the Renaissance.

Any product of handicrafts inspired by the styles of the Renaissance.

81. *Quotient*:

- Any term of arithmetic or algebra.
- Any number.
- Any writing implement or computing device.

82. *Oxidation*:

- Any term of chemistry.
- Any result or manifestation of oxidation.
- Any substance commonly subject to oxidation.
- Any vital process involving oxidation.
- Any agency, apparatus, or technique employed in experiments of oxidation.
- Any branch of science or technology in which the process of oxidation plays an important part.

83. *Haemoglobin*:

- Any term of animal anatomy, physiology, or pathology.
- Term of pathologic technique or of therapeutics used in connection with the investigation and treatment of abnormal conditions of the blood.

84. *Axiom*:

- Any term of metaphysical dialectics.
- Word denoting or implying belief or feeling of certainty or conviction.
- Any term of geometry.

85. *Amazon*:

- Any term or name in physical geography.
- Any term or name of classical mythology.
- Word denoting or implying the female sex.
- Word denoting or implying strength or aggressiveness.

86. *Isosceles*:

- Any term of geometry.

87. *Cohesion*:

- Any physical property of matter.
- Any adhesive medium, substance, or contrivance.
- Any material especially noted for its cohesion.
- Word denoting or implying a state of aggregation of matter or resistance to disaggregation.

88. *Protoplasm*:

- Any term of biology.
- Word pertaining to the structure, composition, or properties of protoplasm.
- Word pertaining to apparatus, technique, or reagents of biological investigation.

89. *Centrifugal*:

- Any term of dynamics or celestial mechanics.

Any contrivance involving rotary motion.

Any apparatus, substance, or technique of investigation or manufacture involving the use of centrifugal force.

Word denoting or implying rapid motion.

90. *Molecule*:

Any term of chemistry.

Any chemical substance.

91. *Cotyledon*:

Any term of botany.

Any plant.

92. *Abscissa*:

Any term of geometry or trigonometry.

Word pertaining to the diagrammatic representation of statistical measurements.

93. *Gravitation*:

Any term of celestial mechanics, aeronautics, or ballistics, or pertaining to theory of motion.

Any means of measuring weight or of utilizing the force of gravitation.

Any measure of weight.

Word denoting or implying weight.

Any substance or object especially noted either for lightness or for heaviness.

94. *Galvanic*:

Any term of electricity.

Any apparatus, technique, or reagent employed in electroplating.

Any substance or object commonly subjected to electroplating.

Word pertaining to physiological effects of galvanic electricity.

95. *Logarithm*:

Any term of mathematics.

96. *Calyx*:

Any term of botany.

Any flowering plant.

Any color.

97. *Polarization*:

Any term of optics.

Any apparatus, technique, or substance employed in experiments with polarized light.

98. *Cephalic*:

Any term of anatomy.

Any term of anthropology.

Any animal.

Any term of nervous or mental pathology.

99. *Proteid*:

Any food substance.

Term pertaining to the ingestion, digestion, absorption, or assimilation of food or to nutrition in any way.

Term pertaining to technique, apparatus, or reagents of food analysis.

Any organ, system, tissue, or fluid of the animal body.

Any chemical substance which enters into the constitution, or which may be produced as a decomposition product, of proteids.

100. *Kinetic*:

Any term of physics.

Any source or manifestation of energy.

Any contrivance involving rotary motion.

Any apparatus, substance, or technique of investigation or manufacture involving the use of centrifugal force.

Word denoting or implying rapid motion.

90. *Molecule*:

Any term of chemistry.

Any chemical substance.

91. *Cotyledon*:

Any term of botany.

Any plant.

92. *Abscissa*:

Any term of geometry or trigonometry.

Word pertaining to the diagrammatic representation of statistical measurements.

93. *Gravitation*:

Any term of celestial mechanics, aeronautics, or ballistics, or pertaining to theory of motion.

Any means of measuring weight or of utilizing the force of gravitation.

Any measure of weight.

Word denoting or implying weight.

Any substance or object especially noted either for lightness or for heaviness.

94. *Galvanic*:

Any term of electricity.

Any apparatus, technique, or reagent employed in electroplating.

Any substance or object commonly subjected to electroplating.

Word pertaining to physiological effects of galvanic electricity.

95. *Logarithm*:

Any term of mathematics.

96. *Calyx*:

Any term of botany.

Any flowering plant.

Any color.

97. *Polarization*:

Any term of optics.

Any apparatus, technique, or substance employed in experiments with polarized light.

98. *Cephalic*:

Any term of anatomy.

Any term of anthropology.

Any animal.

Any term of nervous or mental pathology.

99. *Proteid*:

Any food substance.

Term pertaining to the ingestion, digestion, absorption, or assimilation of food or to nutrition in any way.

Term pertaining to technique, apparatus, or reagents of food analysis.

Any organ, system, tissue, or fluid of the animal body.

Any chemical substance which enters into the constitution, or which may be produced as a decomposition product, of proteids.

100. *Kinetic*:

Any term of physics.

Any source or manifestation of energy.

PART II. NORMS REPRESENTING VARIOUS DEGREES OF EDUCATION.

The results of our test have varied greatly in different subjects, depending probably on many factors; among these education occupies, of course, a position of importance.

For the purpose of measuring the influence of education we collected three hundred test records from subjects selected as follows: twenty-five pupils from each, the fifth, sixth, seventh, and eighth elementary school years; the same number from each of the four high school years; and the same from each of the four collegiate years.

This material was collected in the fall of 1915, shortly after the beginning of the school year, the work in the elementary school being done between November 22 and December 15; that in the high school between October 4 and 20; and that in college between October 25 and November 15.

In Table 2 we give the calculated averages for all the groups distinguished according to school grade, together with the average deviation for each group.

It appears in the table that education up to the first collegiate year, but not beyond, influences the results of the test. The differences presented by the groups below those of college students are, however, not entirely to be attributed to the influence of education; for an examination of this and other material in our possession shows that at least two other factors contribute toward the results shown in the table: native mental capacity and physiological maturation.

Very marked individual differences are to be observed in all groups; this is shown by the average deviations given in the table for each group and even more strikingly, of course, by the contrasts between the highest and lowest scored test records in each group. Thus, for example, the extremes of high standard value for the fifth elementary school year group were 6 and 251; for

TABLE 2.

Elementary school years.	High school years.		Common reactions.	Doubtful reactions.	Individual reactions.	Failures of reaction.	High standard value.	Individuality index.	Failure index.
			Average	A. D.					
5th		{ Average	24.2	2.3	34.0	39.5	117.8	0.384	1.474
		{ A. D.	8.0	1.6	19.8	27.8	55.0	0.215	0.864
6th		{ Average	22.1	1.8	17.4	58.6	143.1	0.202	2.108
		{ A. D.	7.0	1.5	10.2	17.1	37.0	0.112	0.582
7th		{ Average	29.8	2.2	29.0	40.1	175.0	0.314	1.313
		{ A. D.	7.8	1.7	14.4	19.2	73.7	0.153	0.587
8th		{ Average	37.8	1.4	21.9	38.8	338.2	0.239	1.129
		{ A. D.	7.2	1.2	14.0	19.3	87.2	0.154	0.537
1st		{ Average	50.3	1.9	19.6	28.2	471.6	0.219	0.673
		{ A. D.	9.0	0.9	8.3	12.2	134.7	0.907	0.381
2nd		{ Average	67.8	1.8	15.1	15.4	663.4	0.160	0.283
		{ A. D.	7.9	1.2	6.5	10.0	109.3	0.068	0.212
3rd		{ Average	74.4	1.6	10.7	13.3	795.8	0.110	0.211
		{ A. D.	5.5	1.0	6.3	8.2	179.2	0.064	0.146
4th		{ Average	79.1	1.6	8.2	11.1	956.1	0.084	0.152
		{ A. D.	6.9	1.2	3.2	7.5	202.2	0.033	0.116
1st		{ Average	82.7	1.3	5.3	10.7	1231.6	0.051	0.132
		{ A. D.	5.8	0.8	3.0	6.0	242.8	0.032	0.089
2nd		{ Average	84.7	1.3	8.0	6.0	1221.6	0.084	0.063
		{ A. D.	5.4	0.9	3.8	3.9	231.2	0.040	0.044
3rd		{ Average	83.8	1.0	8.7	6.1	1270.0	0.091	0.072
		{ A. D.	7.6	1.0	5.0	4.4	293.3	0.055	0.064
4th		{ Average	85.3	1.8	9.1	3.7	1223.4	0.093	0.034
		{ A. D.	5.8	1.2	4.6	2.8	247.5	0.050	0.028

the 1st high school year group 33 and 746; and for the first collegiate year group 716 and 1553.

The groups being small it is not improbable that the differences between them are partly to be attributed to accidental variations in their composition, although there is as much chance of this factor (in so far as it operates independently of selection) working against as with the factor of education in the general showing.

The influence of selection will be considered in detail in Part III. Suffice it to say here that in a general way it is probably more or less active at the transitions between all education groups represented in the table, and at two points particularly so, namely, at the transitions from elementary school to high school and from high school to college.

Selection here implies the existence of differences in native mental capacity such as are recognized by every teacher. We have secured teachers' estimates of the mental capacities of all the pupils in the elementary schools, high schools, and college, to whom the test had been given. These estimates are expressed in the following terms: *very bright, bright, average, dull, very dull*. For each test record from a subject rated as "very bright" we selected for comparison one from a subject in the same class at school or college rated as "very dull," "dull," or "average," the order of preference being as given here. In some classes, due perhaps to the personal equation of the teachers in the use of the terms proposed by us, more pupils were reported as "very dull" than "very bright." In such instances no test records marked "dull" or "average" were used for the purpose in hand, but the necessary number of those marked "bright" was added to those marked "very bright" to make the total number in that group equal to that in the group marked "very dull."

Table 3 gives the figures for each group in the elementary schools, high schools, and college. These figures show plainly that a correlation exists between the teachers' estimates of mental capacity and the results of the tests.

As to the factor of physiological maturation, it will be recalled that by the Kent-Rosanoff test, the results of which seem to be practically uninfluenced by systematic education, it has been shown to be active only up to the age of eleven years.¹ It would seem that the results of our present test are influenced by the factor of physiological maturation up to the same age, and not beyond it, as may be judged from the figures in Table 4 representing another part of our material. This material consists of one

¹ Isabel R. and A. J. Rosanoff. *A Study of Association in Children*. Psychol. Review, Jan., 1913.

TABLE 3.

AVERAGES.

Groups of subjects distinguished according to teachers' estimates of mental capacity.		Common reactions.	High standard values.	Individuality index.	Failure index.
Elementary school groups.	Very bright or bright ²¹	29.5	182.6	0.308	1.424
	Very dull, dull, or average ²¹	27.6	157.0	0.328	1.415
High school groups.	Very bright or bright ²²	71.0	791.5	0.143	0.207
	Very dull, dull, or average ²²	67.0	678.6	0.142	0.373
College groups.	Very bright or bright ¹⁸	88.7	1403.2	0.051	0.049
	Very dull, dull, or average ¹⁸	84.5	1212.7	0.095	0.051

The small figures in the second column indicate the number of subjects in each group.

hundred twenty-five test records obtained from adult subjects, long out of school, and classified in five groups according to amount of education, compared with data copied from Table 2, i.e., representing subjects who are much younger and still at school but who have had the same amounts of education.

TABLE 4.

Amounts of education.	Adults, long out of school, or younger subjects, still at school.	AVERAGES.			
		Common reactions.	High standard values.	Individuality index.	Failure index.
4 elem. school yrs.	Adult subjects	20.7	158.9	0.223	2.082
	Younger "	24.2	117.8	0.384	1.474
6 elem. school yrs.	Adult "	27.1	240.1	0.209	1.750
	Younger "	29.8	175.0	0.314	1.313
8 elem. school yrs.	Adult "	31.5	258.6	0.253	1.377
	Younger "	50.3	471.6	0.219	0.673
4 high school yrs.	Adult "	73.7	1001.7	0.123	0.361
	Younger "	82.7	1231.6	0.051	0.132
4 college yrs.	Adult "	85.8	1280.1	0.073	0.047
	Younger " [*]	85.3	1223.4	0.093	0.034

* These subjects are college seniors and not graduates; tests were made at the beginning of the school year.

In this connection it should be borne in mind that not only the factor of physiological maturation but probably other factors as well have had a part in producing the differences between adult and younger subjects shown in the table. Here again the factor of selection, for one, probably plays an important part. For instance, the adults who have had but four or six years of elementary school education must differ considerably, as a group, from school children who have had the same amount of education, but the majority of whom will not drop out of school at this point but will proceed with their studies. Moreover, something is perhaps to be allowed for forgetting in the course of years of being out of contact with school studies.

We find, in fact, that, whether it be due to inferiority by selection or to forgetting, or to other factors, all the adult groups, with the exception of the group of college graduates, show a somewhat lower average of common reactions than the younger subjects of the same amounts of education. Nevertheless the influence of physiological maturation seems to be shown by the high standard values of the groups representing four and six elementary school years of education, but not higher: i.e., the groups which, among school children, include but those who are on the average eleven years of age or less.

In order to eliminate the factors of accidental variation, selection, and, as far as may be possible, physiological maturation, and thus render possible a closer estimate of the influence of the factor of education alone, the test was given a second time during the month of June, 1916, i.e., at the end of the school year, to a number of the subjects in the 8th elementary school year and in the 3rd and 4th high school years.

The results are shown in Table 5. The gains, which, it would seem, are here to be attributed solely, or almost solely, to education, during a period of one school year, amounted to 17.0 per cent in high standard values.

The gains in the course of the corresponding school years shown in Table 2,—to be attributed not solely to education but also to selection and perhaps some other factors as well,—were to the amount of 27.2 per cent.

TABLE 5

Year at school	Tests made at beginning or end of school year	AVERAGES				
		Common reactions	High stand- ard values	Individuality index	Failure index	
8th elem. school year	22	At beginning	37.9	342.6	0.244	1.108
		At end	42.9	430.9	0.251	0.890
3rd high school year	20	At beginning	72.9	770.9	0.119	0.224
		At end	78.3	915.9	0.124	0.181
4th high school year	24	At beginning	78.7	932.2	0.085	0.155
		At end	82.1	1045.9	0.075	0.119

The small figures in the first column indicate the number of subjects in each group.

Turning again to the material represented in Table 5, an examination of the test records in individual cases shows here and there a gain in the course of one school year so far beyond the average as to make it doubtful if it could be wholly attributed to the factor of education. Furthermore, in no less than 16 of the 66 cases the tests at the end of the school year showed a loss instead of a gain!—It seems necessary to assume the existence of another factor as influencing the results of our test, a factor which, for want of any knowledge concerning its nature, we have called *temporary condition of the subject*.

We have selected from the three school year groups represented in Table 5, respectively, the cases which showed the highest gains and the highest losses at the end of the school year, and submit here full copies of both the first and the second tests in each case.

In these test records, as in others to be reproduced, the numbers at the left of the reaction words indicate high standard values.

M. P., male, age 12, 8th elementary school year; total high standard values, first test 249, second test 591.

	1st test	2nd test		1st test	2nd test
geography.....	islands.....	study	crustacean.....	.....	.....
participle.....	1 phrase.....	2 speech	Bonaparte.....	commander.	8 general
Waterloo.....	island.....	22 battle	meridian.....	.....	9 geography
refraction.....	.....	break	chlorophyll.....	.....	.....
arithmetic.....	1 example.....	2 study	tetrahedron.....	.....	.....
botany.....	1 words.....	3 study	Madagascar.....	4 country.....	44 island
isomerism.....	.....	.....	corolla.....	.....	.....
Portugal.....	island.....	6 country	ventral.....	.....	.....
amoeba.....	.....	.....	Belgium.....	1 army.....	9 country
declension.....	1 words.....	pronoun	tangent.....	.....	.....
burette.....	.....	.....	dorsal.....	.....	.....
physics.....	geography..	1 study	colloid.....	.....	.....
hyperbole.....	.....	2 speech	equator.....	2 center.....	2 center
retina.....	.....	80 eye	judiciary.....	department.	department
coagulation.....	.....	.....	synthesis.....	.....	.....
Cervantes.....	.....	.....	Athens.....	nation.....	country
franchise.....	.....	.....	epithelium.....	.....	.....
subtraction....	19 arithmetic..	19 arithmetic	feudalism.....	.....	.....
metabolism.....	.....	.....	coefficient.....	.....	.....
predicate.....	word.....	5 sentence	perennial.....	.....	home
mollusc.....	.....	.....	plebian.....	.....	.....
inquisition.....	.....	.....	catalytic.....	.....	.....
amphibious.....	.....	.....	embryo.....	.....	.....
decimal.....	38 fraction....	38 fraction	spectrum.....	.....	.....
hydraulic.....	13 press.....	13 press	continent.....	6 North.....	18 America
osmosis.....	.....	.....	.....	.....	.....
percentage.....	time.....	15 arithmetic	spore.....	.....	.....
cerebellum.....	.....	.....	theorem.....	.....	.....
fractions.....	9 decimal.....	24 arithmetic	Himalaya.....	33 mountain..	33 mountain
titration.....	.....	.....	Renaissance...	.....	goods
carbohydrates.	.....	.....	quotient.....	16 division...	3 dividend
duodenum.....	.....	.....	oxidation.....	.....	.....
cosecant.....	.....	.....	haemoglobin..	.....	.....
biology.....	1 study.....	1 study	axiom.....	.....	.....
Odyssey.....	.....	.....	Amazon.....	54 river.....	54 river
vertebrate.....	.....	.....	isosceles.....	.....	81 triangle
gravimetric.....	.....	.....	cohesion.....	.....	.....
federal.....	army.....	33 government	protoplasm....	.....	.....
morphology...	study.....	study	centrifugal....	.....	.....
hypotenuse...	.....	.....	molecule.....	science.....	science
Magellan.....	3 explorer..	3 explorer	cotyledon....	.....	.....
hexameter.....	.....	.....	abscissa.....	.....	.....
meteor.....	29 star.....	29 star	gravitation....	7 force.....	geography
momentum....	.....	.....	galvanic.....	.....	.....
Cornwallis....	11 general...	11 general	logarithm.....	.....	.....
protozoon.....	.....	.....	calyx.....	.....	.....
syntax.....	class.....	57 grammar	polarization...	.....	.....
distillation....	.....	.....	cephalic.....	.....	.....
pollen.....	country....	3 bee	proteid.....	.....	.....
peninsula....	campaign..	campaign	kinetic.....	.....	.....
binomial.....	.....	.....	.....	.....	.....

A. P., female, age 13, 8th elementary school year; total high standard values, first test 345, second test 259.

	1st test	2nd test		1st test	2nd test
geography.....	subject.....	study	binomial.....	.....
participle.....	17 grammar	17 grammar	crustacean.....	flower.....	flower
Waterloo.....	river.....	name	Bonaparte.....	name.....	name
refraction.....	.....	-	meridian.....	9 geography	9 geography
arithmetic.....	subject.....	2 study	chlorophyll.....	.....	-
botany.....	.....	-	tetrahedron.....	.....	-
isomerism.....	.....	-	Madagascar.....	river.....	-
Portugal.....	6 country	6 country	corolla.....	.....	-
amoeba.....	.....	-	ventral.....	.....	-
declension.....	19 grammar	19 grammar	Belgium.....	9 country	9 country
burette.....	.....	-	tangent.....	country	city
physics.....	subject.....	1 study	dorsal.....	.....	-
hyperbole.....	.....	-	colloid.....	.....	-
retina.....	.....	-	Equator.....	5 geography	5 geography
coagulation.....	.....	-	judiciary.....	history	civics
Cervantes.....	river.....	1 name	synthesis.....	.....	flower
franchise.....	.....	-	Athens.....	people	country
subtraction.....	19 arithmetic	19 arithmetic	epithelium.....	.....	-
metabolism.....	.....	-	feudalism.....	.....	-
predicate.....	15 grammar	15 grammar	coefficient.....	.....	-
mollusc.....	.....	-	perennial.....	.....	-
inquisition.....	.....	-	plebeian.....	11 people	-
amphibious.....	.....	-	catalytic.....	.....	-
decimal.....	6 arithmetic	6 arithmetic	embryo.....	.....	-
hydraulic.....	.....	-	spectrum.....	.....	-
osmosis.....	.....	-	continent.....	3 geography	3 geography
percentage.....	15 arithmetic	15 arithmetic	spore.....	.....	-
cerebellum.....	.....	-	theorem.....	.....	-
fractions.....	24 arithmetic	24 arithmetic	Himalaya.....	33 mountain	33 mountain
titration.....	.....	-	Renaissance.....	.....	-
carbohydrate.....	9 food	cooking	quotient.....	7 arithmetic	7 arithmetic
duodenum.....	.....	-	oxidation.....	.....	-
cosecant.....	.....	-	haemoglobin.....	.....	-
biology.....	arithmetic	1 study	axiom.....	.....	-
Odyssey.....	.....	-	Amazon.....	54 river	geography
vertebrate.....	.....	-	isosceles.....	flower	arithmetic
gravimetric.....	.....	-	cohesion.....	.....	-
federal.....	party	company	protoplasm.....	.....	-
morphology.....	.....	-	centrifugal.....	.....	-
hypotenuse.....	.....	-	molecule.....	.....	-
Magellan.....	name	name	cotyledon.....	.....	-
hexameter.....	.....	-	abscissa.....	.....	-
meteor.....	geography	arithmetic	gravitation.....	geography	geography
momentum.....	.....	-	galvanic.....	.....	-
Cornwallis.....	name	name	logarithm.....	.....	-
protozoon.....	.....	-	calyx.....	.....	-
syntax.....	57 grammar	57 grammar	polarization.....	.....	-
distillation.....	.....	-	cephalic.....	.....	-
pollen.....	.....	-	proteid.....	32 food	-
peninsula.....	10 geography	10 geography	kinetic.....	Connecticut	-

S. S., male, age 17, 3rd high school year; total high standard values, first test, 481, second test 1001.

	1st test	2nd test	1st test	2nd test
geography.....	climate....	water	binomial.....	1 number.... 7 algebra
participle.....	3 infinitive...	3 infinitive	crustacean....	creeping... flower
Waterloo.....	21 battle....	21 battle	Bonaparte....	45 Napoleon.. 45 Napoleon
refraction.....	2 diffraction..	35 light	meridian.....	9 longitude.. 6 earth
arithmetic.....	circum- subtraction	ference	chlorophyll....	5 chloroform. ether
botany.....	20 plants....	8 flowers	tetrahedron....	tetrameter
isomerism.....		1 isosceles	Madagascar...	4 country.... 1 peninsula
Portugal.....	49 Spain....	49 Spain	corolla.....	1 corollary... sickness
amoeba.....	caterpillar..	worm	ventral.....	1 ventrilo- 1 ventrilo- quist quist
declension.....	case.....	1 adjective	Belgium.....	ruin 3 Germany
burette.....	3 bureau....	3 bureau	tangent.....	22 circle.... 22 circle
physics.....	experiment.	36 chemistry	dorsal.....	endorse.... Dardanelles
hyperbole.....	hyperfluous.	hyperfluous	colloid.....	collie..... cholera
retina.....	revenue... 80	eye	equator.....	1 heat..... 15 earth
coagulation....	conjugation	cohesion	judiciary....	1 judicious... 1 judicial word
Cervantes.....	servant....	survey	Athens.....	3 Sparta.... 3 Sparta
franchise.....	French....	France	epithelium....	epigraph... epidemic
subtraction....	41 addition....	41 addition	feudalism....	slave.... 3 serf
metabolism....	metaphor....	mental	coefficient....	7 mathematics 5 algebra
predicate....	25 verb.....	1 nominative	perennial....	parenthesis parenthesis
mollusc.....	mollent....	molasses	plebeian....	2 aristocracy. 23 common
inquisition....	acquisition....	Spain	catalytic....	1 Catiline.... 1 Catiline
amphibious....	17 water....	botany	embryo....	1 biology.... flower
decimal.....	cipher.... 38	fraction	spectrum....	spectro.... speculate
hydraulic....	hydrophobia 13	press	continent....	6 Europe.... 6 North America
osmosis.....	soaking.... 2	water	spore.....	S.... sport
percentage....	8 fraction.... 4	money	theorem....	1 postulate... 3 theory
cerebellum....	16 cerebrum..	16 cerebrum	Himalaya.....	..... 33 mountain
fractions.....	2 numerator.	multiplica- tions	Renaissance...	rising.... uprising
titration.....	Titus.....	Titanic	quotient....	3 dividend... 3 dividend
carbohydrate..	5 carbon.... 33	sugar	oxidation....	airing.... 1 air
duodenum.....	duodecim..	unum	haemoglobin...	1 biology.... 1 botany
cosecant.....	cozy.....	consequent	axiom.....	17 truth.... 17 truth
biology.....	6 animals....	monkey	Amazon.....	54 river
Odyssey.....	1 Odysseus..	English	isosceles....	9 equal.... 81 triangle
vertebrate.....	firm..... 15	inverte- brate	cohesion....	coincide... 27 adhesion
gravimetric....	1 gravity.... 1	gravity	protoplasm....	soft.... 1 body
federal.....	2 union.... 2	soldiers	centrifugal....	central.... circle
morphology...	theology...	mortal	molecule....	ridicule.... 47 atom
hypotenuse...	arm....	arm	cotyledon....	8 bean.... 8 flower
Magellan.....	52 straits.... 17	strait	abscissa....	absent.... absent
hexameter....	1 hexagon....	dactylic	gravitation....	1 gravity.... 1 gravity
meteor.....	1 meter....	1 meter	galvanic....	discovery... substance
momentum....	1 impulse....	equal	logarithm....	largo.... largo
Cornwallis....	4 Washington 25	Yorktown	calyx....	K.... Calais
protozoon....	creature... 27	amoeba	polarization...	Poland.... flower
syntax.....	meaning... 1	word	cephalic....	..... siphon
distillation....	sprinkle....	germ	proteid....	digestible.. 6 protoplasm
pollen....	36 flower.... 36	flower	kinetic....	..... 43 energy
peninsula....	14 land.... 4	cape		

I. S., female, age 15, 3rd high school year; total high standard values, first test 796, second test 479.

	1st test	2nd test	1st test	2nd test
geography.....	2 Europe....	8 land	binomial.....	arithmetic..
participle.....	Latin.....	1 English	crustacean....	5 zoology....
Waterloo.....	46 Napoleon..	46 Napoleon	Bonaparte....	9 France....
refraction.....	arithmetic..	35 light	meridian....	4 latitude...
arithmetic.....	school....	brain	chlorophyll....	3 botany....
botany.....	16 plant....	life	tetrahedron....	Latin.....
isomerism.....		3 geometry	Madagascar....	5 geography..
Portugal.....	49 Spain....	49 Spain	corolla.....	34 flower....
amoeba.....	4 zoology....	evolution	ventral.....	door.....
declension.....	8 Latin....	19 grammar	Belgium.....	starvation..
burette.....	hair.....	3 bureau	tangent.....	6 geometry...
physics.....	3 laboratory.	1 energy	dorsal.....	
hyperbole.....	disease....	hyphenated	colloid.....	
retina.....		desire	equator.....	1 Brazil....
coagulation.....		coefficient	judiciary....	9 court....
Cervantes.....	history....	1 Dante	synthesis....	
franchise.....	religion....	5 suffrage	Athens.....	72 Greece....
subtraction....	19 arithmetic.	19 arithmetic	epithelium....	English...
metabolism....	symbol....	symbol	feudalism....	2 England...
predicate....	15 grammar..	15 grammar	coefficient....	1 physics....
mollusc.....		mole	perennial....	7 exponent...
inquisition....	32 Spain....	1 religion	Latin.....	27 annual
amphibious....	2 zoology....	life	plebeian....	4 Rome....
decimal.....	6 arithmetic.	38 fraction	catalytic....	1 Catiline...
hydraulic.....	chemistry..	trans.	embryo.....	botany....
		mittance	spectrum....	ghost....
osmosis.....		isosceles	continent....	18 America...
percentage....	population.	3 part	spore.....	hygiene....
cerebellum....	Latin.....	temperance	theorem....	26 geometry...
fractions....	24 arithmetic.	7 parts	Himalaya....	1 geography..
titration.....	Titian....	Asia	Renaissance....	13 Italy....
carbohydrate..	botany....	9 chemistry	quotient....	7 arithmetic..
duodenum....		united	oxidation....	17 oxygen....
cosecant.....	Latin....	together	haemoglobin...	disease....
biology.....	18 life....	class	axiom.....	axis.....
Odyssey.....	52 Homer....	1 wandering	Amazon.....	7 Brazil....
vertebrate....	4 zoology....	27 animal	isosceles....	81 triangle...
gravimetric....	6 physics....	1 gravity	cohesion....	8 physics....
federal.....	33 government	1 united	protoplasm....	5 botany....
morphology....	4 science....	3 morphine	centrifugal....	
hypotenuse...	9 geometry...	9 geometry	molecule....	1 physics....
Magellan.....	1 Spain....	1 discovery	cotyledon....	8 botany....
hexameter....	3 geometry...	division	abscissa....	
meteor.....	10 astronomy.	2 light	gravitation....	6 physics....
momentum....	8 physics....	distance	galvanic....	18 Newton
Cornwallis....	Lafayette..	7 surrender	logarithm....	Gaul....
protozoon....	8 zoology....	protein	calyx.....	lumbering..
syntax.....	Latin....	reason	polarization...	5 botany....
distillation....	health....	man	cephalic....	cold....
pollen.....	6 botany....	36 flower	proteid....	1 physiology.
peninsula....	10 geography..	extension	kinetic.....	43 energy....

H. R., female, age 16, fourth high school year; total high standard values, first test 900, second test 1285.

	1st test	2nd test	1st test	2nd test
geography.....	2	school..... America	peninsula..... 25	island..... 3 Italy
participle.....	17	grammar... 17 grammar	binomial..... 2	polynomial. 7 algebra
Waterloo.....	46	Napoleon.. 46 Napoleon	crustacean..... 1	fish..... 1 fish
refraction.....	3	physics... 35 light	Bonaparte..... 9	France..... 9 Waterloo
arithmetic.....		fractions... 11 algebra	meridian..... 4	latitude.... division
botany.....	8	flowers... 16 zoology	chlorophyll... 36	green.... 36 green
isomerism.....		science.... science	tetrahedron....	three..... biology
Portugal.....	1	Europe.... 49 Spain	Madagascar... 44	island.... 44 island
amoeba.....	4	biology.... botany	corolla.....	beads.... 34 flower
declension.....	4	nouns.... 19 grammar	ventral.....	medicine.... throat
burette.....		burette.... hair	Belgium..... 3	Germany.... 3 Germany
physics.....	1	heat..... 3 electricity	tangent..... 6	geometry.... 6 geometry
hyperbole.....	19	exaggeration..... 19 exaggeration	dorsal.....	body.... 2 anatomy
retina.....		material... 80 eye	colloid.....	physics....
coagulation.....		together... 1 condensation	equator..... 1	heat..... 2 center
Cervantes.....		Greek.... 42 Don Quixote	judiciary..... 2	justice.... 3 judges
franchise.....	5	suffrage.... 5 suffrage	synthesis..... 1	grammar.... 5 combination
subtraction.....	19	arithmetic... 19 arithmetic	Athens..... 72	Greece.... 72 Greece
metabolism.....		statics.... science	epithelium....	Greek.... body
prejudge.....	28	subject.... 5 sentence	feudalism....	nobles.... 4 mediaeval
mollusc.....		Japan.... 8 animal	coefficient.... 5	algebra.... 5 algebra
inquisition.....	32	Spain.... 32 Spain	perennial..... 3	time.... 2 year
amphibious.....	5	fish.... 5 fish	plebeian....	worker.... 10 patrician
decimal.....	2	fractions... 6 arithmetic	catalytic..... 11	chemistry.. 11 chemistry
hydraulic.....	4	physics.... 38 water	embryo..... 6	young.... 6 young
osmosis.....	1	breathing.. 1 breathing	spectrum....	zoology.... eye
percentage.....		marks.... 1 mark	continent..... 18	America.... 18 America
cerebellum.....	2	anatomy... 2 anatomy	spore..... 2	botany.... 2 reproduction
fractions.....	24	arithmetic.. 24 arithmetic	theorem..... 26	geometry.... 1 axiom
titration.....		science....	Himalaya..... 31	mountains.. 1 China
carbohydrate..	1	water.... 33 sugar	Renaissance... 2	awakening. 8 art
duodenum.....	1	two....	quotient..... 7	arithmetic.. 16 division
cosecant.....	7	geometry... 7 geometry	oxidation.... 1	air.... 15 chemistry
biology.....	6	animals.... 15 zoology	haemoglobin....	science....
Odyssey.....	52	Homer.... 52 Homer	axiom..... 2	statement.... apothem
vertebrate.....	2	spine.... 2 spine	Amazon..... 12	woman.... 12 woman
gravimetric.....		science.... science	isosceles.... 81	triangle.... 81 triangle
federal.....	2	national... 2 national	cohesion.... 5	attraction.. 2 together
morphology....	1	medicine.... 4 science	protoplasm.... 3	substance.. 3 substance
hypotenuse....	9	geometry... 9 geometry	centrifugal....	circle.... 33 force
Magellan.....	1	exploration....	molecule.... 5	small.... 5 small
hexameter....	2	navigation....	cotyledon....	science.... science
meteor.....	10	pentagon.... 5 six	abscissa....	disease.... 5 geometry
momentum....		astronomy.. 8 comet	gravitation.... 15	earth.... 3 pull
Cornwallis....	2	time.... 9 speed	galvanic....	heat.... physics
protozoon....	27	history.... 9 revolution	logarithm.... 3	algebra.... 11 mathematics
syntax.....	57	amoeba.... 4 biology	calyx..... 2	flowers.... 2 flowers
distillation....		grammar... 57 grammar	polarization...	bees.... 4 physics
pollen.....	4	adulteration 20 water	cephalic....	science.... science
		flower.... 36 flower	proteid.... 32	food.... 32 food
			kinetic.... 11	theory.... 11 theory

W. H., male, age 16, 4th high school year; total high standard values, first test 1474, second test 1219.

	1st test	2nd test		1st test	2nd test
geography.....	10	history.... 10	history	crustacean....	22
participle.....	28	verb..... 15	noun	Bonaparte....	9
Waterloo.....	46	Napoleon.. 46	Napoleon	meridian.....	3
refraction.....	11	reflection.. 11	reflection	chlorophyll....	5
arithmetic.....	3	spelling.... 3	spelling	tetrahedron...	poetry.....
botany.....	2	biology.... 2	biology	Madagascar....	44
isomerism.....	4	crystal.... 4	crystals	island..... 44	island
Portugal.....	49	Spain.... 49	Spain	corolla..... 34	flower.... 1
amoeba.....	3	cell..... 29	molecule	ventral.....	blood.... 1
declension.....	29	noun.... 29	noun	Belgium..... 10	Brussels... 2
burette.....	11	pipette.... 11	pipette	tangent..... 10	cotangent.... 10
physics.....	36	chemistry.. 36	chemistry	dorsal..... 8	fin..... caudal
hyperbole.....	9	parabola... 9	parabola	colloid.....	..... 1
retina.....	80	eye..... 2	cornea	equator..... 8	meridian.... 8
coagulation.....		boiling.... 2	protoplasm	judiciary.... 25	judge.... 2
Cervantes.....	25	Spain.... 42	Don Quixote	synthesis.... 39	analysis.... 39
franchise.....	5	suffrage.... 1	freedom	Athens.....	Homer.... Minerva
subtraction.....	41	addition.... 41	addition	epithelium.....	.....
metabolism.....				feudalism.....	duke.... 1
predicate.....	2	object.... 2	object	coefficient.... 7	knighthood
mollusc.....	3	fish.... 16	clam	perennial.... 27	exponent.... 7
inquisition.....	32	Spain.... 32	Spain	plebeian.... 3	biennial
amphibious.....		toad.... 28	frog	aristocrat.... 3	aristocrat
decimal.....	38	fraction.... 38	fraction	catalytic.....	..... 3
hydraulic.....	38	water.... 38	water	embryo.....	platinum
osmosis.....	4	plants.... 20	membrane	spectrum.... 2	fertilization 10
percentage.....	8	fraction.... 8	fraction	continent.... 28	spectroscope
cerebellum.....	16	cerebrum.... 16	cerebrum	spore..... 16	island.... 28
fractions.....	9	decimal.... 13	decimals	seed..... 16	island
titration.....				theorem.... 3	seed
carbohydrates.	11	starch.... 2	proteid	problem.... 3	problem
duodenum.....	2	twelve.... 2	octavo	Himalaya.....	Alps....
cosecant.....	12	sine.... 12	sine	Renaissance.... 2	Reformation.... 2
biology.....	6	botany.... 15	zoology	quotient.... 3	predicate.... 3
Odyssey.....	52	Homer.... 52	Homer	oxidation.... 13	dividend
vertebrate.....	15	invertebrate.... 3	man	haemoglobin.... 84	reduction.... 13
gravimetric....	12	weight.... 1	gravity	axiom..... 1	blood.... 84
federal.....	7	constitu-.... 2	national	rule..... 6	blood
		tional		Amazon.....	scholium
morphology....	3	biology.... 3	sleep	equator.... 6	South
hypotenuse....		side.... 2	arm		America
Magellan.....	52	straits.... 52	straits	isosceles....	oblique....
hexameter.....	5	six.... 4	pentameter	cohesion....	equilateral
meteor.....	29	star.... 29	star	protoplasm.... 14	separation.... 27
momentum.....	17	force.... 17	acceleration	cell.... 9	adhesion
Cornwallis....	25	Yorktown.... 25	Yorktown	centrifugal.... 27	amoeba
protozoon.....	2	cell.... 3	protoplasm	centripetal.... 27	centripetal
syntax.....	57	grammar.... 5	declension	molecule.... 47	atom.... 47
distillation....	5	evaporation.... 4	fermentation	atom.... 47	atom
pollen.....	4	fertilization.... 4	anther	botany.... 8	monocoty-
peninsula....	25	island.... 25	island	ledonous	
binomial.....	2	trinomial.... 2	trinomial	abscissa.... 4	mantissa
				gravitation.... 1	gravity.... 1
				galvanic.... 24	cell.... 7
				logarithm.... 11	exponent
				calyx.... 41	sepal
				polarization.... 4	fertilization
				cephalic....	.....
				proteid.... 3	albumen.... 1
				kinetic.... 2	carbohydrate
				static.... 2	potential

The question of the influence of the factor of sex in our test has interested us from the beginning and, in making our arrangements for the collection of material, we endeavored as far as seemed practicable to secure data that might be useful in this connection. These data are summarized in Table 6.

In the course of our experience in this work we have come to regard the total high standard value as a more significant and more trustworthy measure of intellectual condition than any of the others made available by the test, i.e., number of common reactions, individuality index, failure index, etc.

Of the nineteen groups of subjects represented in Table 6, the male subjects made a better showing in average high standard value in nine, and the female subjects in ten groups; in other words, no difference in this respect is apparent between the sexes.

But the other measures revealed a difference in a strikingly consistent way. When a subject is unable to respond to a given stimulus word with a reaction possessing high standard value, he may either respond with a common reaction not possessing such value or with an individual reaction, or he may fail to react. The table shows that in eighteen of the nineteen groups of subjects the males showed a greater tendency than the females to follow the first alternative, i.e., of giving a common reaction possessing no high standard value or an individual reaction, rather than failing to react.

Considering the fact that this tendency is shown, in our material, at all ages from nine years up and under various conditions of amount of education and selection of subjects, it would seem that we are dealing here with a true difference between the sexes in mental constitution. Perhaps this is a manifestation of the relative passivity, conservatism, lack of venturesomeness, and other such traits popularly attributed to the female sex.

TABLE 6.

Description of subject groups.	Grade in school or amount of education.	Sex	AVERAGES.			
			Common reactions.	High standard value.	Individuality index.	Failure index.
Pupils at school or college.	5th elem. school year	{ Male Female	12 13 24.7 23.8	109.1 125.8	0.454 0.320	1.183 1.673
	6th elem. school year	{ Male Female	13 12 22.9 21.1	152.0 133.4	0.204 0.200	2.055 2.166
	7th elem. school year	{ Male Female	12 13 34.2 25.7	217.7 135.5	0.317 0.313	1.089 1.519
	8th elem. school year	{ Male Female	13 12 38.1 37.5	337.2 339.3	0.218 0.261	1.886 1.064
	1st high school year	{ Male Female	13 12 50.4 51.2	516.3 423.2	0.233 0.205	0.624 0.726
	2nd high school year	{ Male Female	12 13 69.1 66.7	650.8 675.1	0.161 0.159	0.239 0.324
	3rd high school year	{ Male Female	12 13 77.0 71.9	857.6 738.8	0.145 0.078	0.113 0.301
	4th high school year	{ Male Female	13 12 82.2 75.8	1081.1 820.8	0.081 0.086	0.103 0.206
	1st college year	{ Male Female	12 13 85.3 80.3	1201.6 1259.4	0.061 0.042	0.084 0.177
	2nd college year	{ Male Female	13 12 85.9 83.4	1188.6 1257.4	0.092 0.075	0.040 0.087
Adult subjects long out of school.	3rd college year	{ Male Female	12 13 84.3 83.3	1188.9 1344.9	0.081 0.101	0.066 0.078
	4th college year	{ Male Female	13 12 84.8 85.8	1091.5 1366.3	0.116 0.069	0.025 0.044
	4 elem. school years	{ Male Female	13 12 21.5 19.9	147.7 171.1	0.259 0.184	1.867 2.315
	6 elem. school years	{ Male Female	13 12 28.8 25.3	264.7 221.0	0.222 0.195	1.585 1.929
	8 elem. school years	{ Male Female	12 13 36.2 27.2	305.1 215.8	0.284 0.226	0.978 1.746
	4 high school years	{ Male Female	6 19 71.9 74.2	932.0 1023.2	0.084 0.136	0.307 0.378
	4 college years	{ Male Female	12 13 86.3 85.4	1353.8 1212.0	0.079 0.063	0.034 0.059
	Holding Master's degree	{ Male Female	12 13 85.6 92.2	1393.9 1518.5	0.111 0.038	0.027 0.040
	Holding Doctor's degree	{ Male Female	15 10 86.7 83.4	1452.5 1291.3	0.109 0.107	0.016 0.047

The small figures in the third column indicate the number of subjects in each group.

PART III. CERTAIN SELECTIVE INFLUENCES AND EFFECTS OF SELECTION.

The factor of selection, as influencing the results shown by various groups of subjects represented in our material, has already been referred to; but its importance seems to be sufficient to warrant special consideration.

The participation of a subject in a given type of activity may be regarded, *a priori*, as evidence of his possession of a certain fitness for it; similarly, his advancement in it may be regarded to some extent as a measure of the fitness. This must, of course, apply to education and scientific pursuits as to any other type of activity.

Thus, every group of subjects distinguished according to amount of education is a selected group which may be expected to show not only the influence of the given amount of education but also that of native mental qualities which go to make up the fitness for it.

This principle of selection by fitness may be readily demonstrated in connection with some of the groups represented in our material.

Table 7 shows the marked contrasts that there are between groups representing approximately the same amounts of education but variously selected according to fitness for education or scientific pursuits as assumed from the fact of continuance or interruption of scholastic work or of advancement in scientific standing.

Thus, adults, whose total education has consisted of eight elementary school years, stand below first year high school students tested at the beginning of the term, who have had, of course, approximately the same amount of education but are distinguished by the fact of continuing their work at school.

Similarly, adults who have had a full high school education stand below college freshmen; and college graduates stand below

TABLE 7.

Subject groups. (25 subjects in each group.)	AVERAGES.	
	Common reactions.	High standard values.
Adults, education eight elementary school years	31.5	258.6
First year high school students	50.3	471.6
Adults, full high school education	73.7	1001.7
First year college students	82.7	1231.6
College graduates	85.8	1280.1
Persons holding Doctors' degree, not in scientific directory	85.4	1388.0
Mentioned in "American Men of Science," not "starred"	90.0	1479.2
"Starred men" ¹	90.7	1625.0

those who have undertaken graduate work and received a Doctor's degree. In the last instance, particularly, it would seem certain that the difference is not in any appreciable degree due to education, inasmuch as the influence of education, as far as this test is concerned, apparently ceases in the first collegiate year.

Perhaps even more significant are the differences between the last three groups represented in the table. The subjects whose names appear in Cattell's "American Men in Science" stand above those who have gained the Doctor's degree but are not mentioned in the scientific directory; the leaders in science, the "starred

¹ In scoring "starred men's" records for the statistics of this table it was necessary to make allowance for the fact that the test record of each subject entered into the formation of the "high standard." The corrected "total high standard value" for each test record in this group was calculated according

to this formula: $v - 100 + \frac{v - 100}{99} = v_1$.

In this formula v represents the uncorrected, and v_1 the corrected total high standard value. The 100 points deducted from v correspond to the contribution of each test record toward the "high standard," which must be eliminated in order that the given test record may not be scored by a standard

partly represented by itself. The addition of $\frac{v - 100}{99}$ constitutes an allow-

ance for an average "high standard" test record which must be added to the remaining 99 test records in order that the scoring might still be based on a standard representing a full 100 test records.

men" in Cattell's book, stand above those who are not "starred."

It is, however, by no means to be supposed that the selection is perfect, or that fitness alone determines it.

In the first place, it is to be noted that the positive effects of selection appear to be more accurate than its negative effects. Thus, the group of adults who have had but four elementary school years of education, with its average high standard value of 158.9, presented an average deviation of 129.8, or 81.8 per cent; for the group of elementary school graduates the average deviation amounted to 55.2 per cent; for high school graduates, 26.7 per cent; for college graduates, 22.4 per cent; for those who hold a Doctor's degree but are not mentioned in the scientific directory 24.4 per cent; for those mentioned in the directory but not "starred," 17.0 per cent; and for the group of "starred men," 14.3 per cent. In other words, with but one exception, at every step upwards in the scale the positive phase of selection is characterized by a reduction of the relative extent of deviation from the average high standard value.

But it is mainly through an examination of individual test records that the inaccuracy of the selection, both in its positive and negative phases, is clearly brought to light.

Assuming that the total high standard value as revealed by our test is, in this connection, a fairly reliable index of what we have called fitness (its limitations in this respect will be discussed farther on), it is significant that two subjects in the group of "starred men" represented in Table 7 furnished test records whose high standard values were lower than the average for college graduates; while four subjects in the group of college graduates represented in the same table furnished test records whose high standard values were higher than the average for "starred men."

Similarly, one subject in the group of college graduates furnished a test record whose high standard value was 910,—lower than the average for high school graduates—while one in the group of adults, high school graduates, furnished a record whose high standard value was 1614,—nearly up to the average for "starred men."

PART IV. MEASUREMENTS MADE IN CASES OF INSANITY.

As stated in the beginning, this work was undertaken mainly owing to a need, felt in practical psychiatry, for standardized methods of mental measurement. This Part is to consist in a presentation of material collected from certain groups of insane subjects in comparison with norms given in Part II.

Our interest has centered particularly on dementia praecox, manic depressive psychoses, paranoic conditions, and epilepsy.

It is now widely recognized that impure or transition forms of these psychoses exist. In selecting material we tried to find, as far as possible, cases of well established diagnosis, and to eliminate "allied to dementia praecox," "allied to manic depressive psychoses," and other conditions exhibiting atypical traits of symptomatology or course. Among the manic-depressive psychoses, however, we included cases of so-called involutional melancholia.

In order that our pathological material might be comparable with our norms in respect to education only subjects who had received their education in American schools were selected; a number of subjects had to be excluded, however, whose education, though received in this country, was largely private, or irregular, or for other reasons not to be accurately evaluated. Also subjects whose education amounted to less than four elementary school years were excluded.

As we were interested in native mental capacity and not in results of psychotic disease, we sought out cases, as far as possible, of recent onset and free from evidences of mental deterioration. Many subjects had to be excluded who were either unwilling or unable to cooperate fully in the test by reason of very active psychotic manifestations or any other cause.

Among insane subjects commonly, and among apparently normal subjects occasionally, as has been shown, some are met with who present unusual associational mechanisms which are

characterized by an unduly marked tendency to respond with individual reactions in free association tests. This tendency, in connection with the present test, must be carefully distinguished from that which also frequently results in large numbers of individual reactions but which is based on limitation of mental capacity and not on unusual associational mechanisms.

In order to exclude from our pathological material cases in which a poor showing in the test might be made by reason of such unusual associational tendency and not limitation of mental capacity, we gave to all cases, as a preliminary, the Kent-Rosanoff test; those which gave, by that test, more than fifteen individual reactions were excluded.

The result was a selection of 205 cases classified as follows:

Dementia praecox	120
Manic-depressive psychoses	49
Paranoic conditions	20
Epilepsy	16

It will readily be judged that our manner of selection has been such that the resulting material could by no means be regarded as truly representative of the clinical groups investigated. Although there are at the Kings Park State Hospital over 4,500 patients and an admission rate of over 1,000 a year, we were compelled to seek cases at the Brooklyn, Manhattan, and Central Islip State Hospitals before we could gather even the small amount of clinical material represented in our study. The fact is that the clinical groups studied by us are well known to contain much larger proportions of subjects who have shown early in life low degree of educability or other evidence of mental disability than are to be found in the unselected population at large. Such mental disability, however, is hardly an essential part of the clinical picture in any of these groups and may rather be regarded as a complication the main significance of which is due to its great frequency,—a matter which need not occupy us here.

Our selected material may, accordingly, be expected to show only what influence, upon the showing in the test employed by us, has the existence of dementia praecox, a manic-depressive

constitution, a paranoic condition, or epilepsy, as such, i.e., independently of the frequently observed complications of original inferiority, or acquired deterioration, or both.

For convenience in presentation our material may be divided into two parts: that obtained from subjects who had had not more than a complete elementary school education (Table 8), and that obtained from subjects who had had more than a complete elementary school education (Table 9). The numbers in the tables represent averages for each group.

Among the 11 cases of paranoic conditions represented in Table 8 there were: 1 with an education of four, 1 with five, 2 with six, 6 with seven, and 1 with eight elementary school years. The figures for normal adults given for comparison with this group have been derived by calculation based on averages for subjects of corresponding amounts of education.

Among the 11 cases of epilepsy represented in Table 8 there were: 2 with an education of four, 3 with five, 1 with six, 4 with seven, and 1 with eight elementary school years. The figures for normal adults given for comparison with this group, also those given for comparison with all groups of neuropathic cases, have been derived in the manner already described in the preceding paragraph.

It will be seen from Table 8 that our neuropathic groups, with the sole exception of epilepsy, have furnished higher averages of common reactions than our normal groups. This showing is evidently associated with a tendency to furnish also greater numbers of individual reactions and fewer failures of reaction and is perhaps in a measure to be attributed to the lowered inhibition which is so characteristic of neuropathic subjects in general.

It has already been demonstrated that a similar tendency to give higher numbers of common and individual reactions and fewer failures of reaction is shown by male subjects as compared with female ones; but in this case the showing is not to be attributed to sex, as 83 of the 165 neuropathic subjects were women and the sexes were equally represented in the normal groups used for comparison.

It would seem, then, that there is in normal subjects, inde-

TABLE 8.

EDUCATION	Clinical groups.	Common reactions.	High standard value.	Individuality index.	Failure index.
4 elem. school years	Dementia praecox ¹⁶	24.8	151.6	0.371	1.445
	Manic-depressive ²	30.5	186.0	0.166	1.979
	Normal adults ²⁵	20.7	158.9	0.223	2.082
5 elem. school years	Dementia praecox ¹⁰	22.2	140.7	0.399	1.410
	Manic-depressive ⁵	44.2	283.8	0.331	0.494
6 elem. school years	Dementia praecox ³³	32.9	229.2	0.472	0.847
	Manic-depressive ¹⁵	36.2	195.0	0.350	0.886
	Normal adults ²⁵	27.1	240.1	0.209	1.750
7 elem. school years	Dementia praecox ²⁵	39.6	301.4	0.358	0.636
	Manic-depressive ⁸	43.1	356.3	0.224	1.016
8 elem. school years	Dementia praecox ²⁰	46.1	429.2	0.292	0.549
	Manic-depressive ⁹	51.0	425.8	0.183	0.573
	Normal adults ²⁵	31.5	258.6	0.253	1.377
Mixed groups	Paranoic conditions ¹¹	42.1	344.4	0.266	0.968
	Normal adults	28.1	239.4	0.226	1.645
	Epilepsy ¹¹	25.0	97.8	0.553	0.850
	Normal adults	27.0	224.7	0.228	1.705
All groups	Neuropathic cases ¹⁶⁵	36.3	265.3	0.363	0.879
	Normal adults	27.4	231.8	0.226	1.689

The small figures in the second column indicate the number of subjects in each group.

pendently of sex, an inhibiting mechanism which is lacking in neuropathic subjects and which is distinct from the somewhat similar inhibiting mechanism existing in the female and lacking in the male sex.

The high standard values appear, on the whole, slightly lower for dementia praecox, higher for manic-depressive psychoses and paranoic conditions, and distinctly lower for epilepsy than for groups of normal subjects of corresponding amounts of education. The differences are not very striking if we leave out of consideration the groups of cases which are too small for trustworthy results. It is clear, therefore, that, as far as subjects of elementary education are concerned, the existence of one of the

neuropathic conditions here considered, with the possible exception of epilepsy, does not in the average case affect unfavorably the showing in the test as regards high standard value.

A comparison of the dementia praecox with the manic-depressive groups shows that the individuality index is uniformly higher and the number of common reactions lower in dementia praecox.

TABLE 9.

Clinical groups.		Common reactions.	High standard value.	Individuality index.	Failure index.
Dementia praecox	16	58.9	664.4	0.204	0.468
Normal subjects		75.6	941.1	0.117	0.395
Manic-depressive	10	65.3	741.3	0.125	0.328
Normal subjects		73.3	886.9	0.127	0.276
Paranoic conditions	9	59.9	591.0	0.285	0.160
Normal subjects		76.2	975.6	0.108	0.316
Epilepsy	5	51.4	418.8	0.325	0.374
Normal subjects		74.9	936.8	0.120	0.256
All neuropathic cases	40	59.8	636.4	0.218	0.352
Normal subjects		75.0	934.8	0.153	0.359

We may now turn to Table 9 in which is represented the material obtained from subjects of higher than elementary school education.

Among the sixteen cases of dementia praecox represented in this table there were 4 with an education of one, 3 with two, 1 with three, and 4 with four high school years; and 1 with two, 1 with three, and 2 with four collegiate years.

Among the 10 cases of manic-depressive psychoses there were 3 with an education of one, 2 with two, 2 with three, and 2 with four high school years, and 1 with a full collegiate education.

Among the 9 cases of paranoic conditions there were 2 with an education of two, 2 with three, and 4 with four high school years, and 1 with two collegiate years.

Among the five cases of epilepsy there were 1 with an education of one, 1 with two, and 2 with four high school years, and 1 with one collegiate year.

The figures for normal subjects in this table given for comparison with the respective neuropathic groups and with all the neuropathic cases treated in bulk have been calculated in the same manner as those given in Table 8 for comparison with the mixed education groups.

Table 9 shows that the neuropathic groups have furnished fewer common reactions, lower high standard values, and higher individuality and failure indices than normal groups of corresponding degrees of education. This is true of clinical groups considered individually as well as all together.

Thus, the showing made by neuropathic subjects of higher than elementary education is in rather striking contrast with that made by similar subjects who had had not more than an elementary school education.

Is there in neuropathic subjects a failure of full mental maturation or, at the time of transition from immature to adult age, a deterioration in respect to educability? Or, does higher education involve demands upon mentality which are so much greater than those involved in elementary education as to bring out a contrast between neuropathic and normal constitutions which exists at immature as well as adult ages but which the application merely of elementary education fails to reveal? These are questions which suggest tasks for future research but which must, for the present, remain unanswered.

Of the four neuropathic groups here considered the showing most closely approaching that of normal subjects is that of the manic-depressive group; and this is followed by the remaining groups in this order: dementia praecox, paranoic conditions, and epilepsy.

It should be noted that a neuropathic constitution does not preclude the possibility of at least a fairly good showing in this test: 8 of the 40 neuropathic subjects represented in Table 9 furnished high standard values above the normal averages for corresponding degrees of education; these were distributed as follows: 2 cases of dementia praecox (out of a total of 16), 4 cases of manic-depressive psychoses (out of a total of 10), 2 cases of paranoic condition (out of a total of 9), and none among the five cases of epilepsy.

PART V. EVALUATION OF THE METHOD. SUGGESTION FOR BETTER STANDARDIZATION.

In the course of our work some who were assisting us in the collection of material and others who had become interested in the test offered criticisms of our selection of stimulus words: that there is too large a proportion of scientific terms; that some of the words are so seldom used that it is possible for one not to know them and yet have a fair general knowledge of the subjects concerned (*isomerism, colloid, abscissa*); that some words may, through a slight mispronunciation, be mistaken for others much like them in sound (*hyperbole* for *hyperbola*, *synthesis* for *sympthesis*).

We shall show, presently, that very considerable changes in our list of stimulus words could be made with resulting improvement of the method; but these changes have nothing to do with the above mentioned criticisms and would have to be based on purely empirical grounds.

Moreover, within certain limits, the selection of stimulus words is not so important a matter as might appear, the value of the test depending to a greater extent on thoroughness of standardization. The fact that persons of certain education fail to respond to many of the stimulus words because they are scientific terms, perhaps seldom used, and therefore not known to them, need not lead to an underestimation of their mental capacity, provided the showing of each is compared only with that of others of a similar amount and kind of education; and, after all, there is to-day no education without a certain minimum of science.

Also, the fact that some subjects will give to the word *hyperbole* such responses as *curve*, *mathematics*, and *parabola*, evidently mistaking it for *hyperbola*, will not lead to error, as these responses and others like them have, in the process of standardization, found places in the frequency tables with values probably corresponding to the measure of the chance of misapprehension.

Other criticisms that have been offered pertain mainly to our instruction to subjects to respond with the first word: when two or three words crowd into consciousness almost at once one hardly knows which was the first; some subjects will exercise choice, more or less consciously, in spite of instructions, and thus disturb the uniformity of conditions; the first word aroused by association, being more or less casual, cannot always be regarded as the best indication of the subject's knowledge; reaction time should be recorded or a set limit of time for reaction enforced with the aid of a metronome.

Our main defense of our method consists in the results of its application. That it is burdened with limitations and shortcomings, and the extent to which it is so burdened, we shall try to show as far as possible. We can say at this point, however, that the above criticisms would not seem to be wholly valid.

The difficulty of choosing the first of a rapid succession of words aroused by association we judge to be but rarely experienced, as subjects seldom show any evidences of it and seldom speak of it even when giving an introspective account; therefore we believe any error that may result from this source to be insignificant, except possibly in subjects of unusual mental constitution.

That some subjects may exercise more or less conscious choice, in spite of instructions not to do so, we are not in position to dispute; we do not know how often it happens, but our experience leads us to believe that the instructions, though setting no limit of time for reaction, nevertheless effectually exclude for almost all cases the chance of any considerable conscious deliberation, as may be judged from the fact that the great majority of our adult subjects have completed the test in from fifteen to twenty minutes.

Among the highest scored test records many have been obtained in less than ten minutes; which shows that, if subjects, who have taken a longer time, did so for the purpose of conscious deliberation, they were not necessarily enabled thereby to produce a higher scored result.

It should further be considered that the specificity of the great

majority of the responses indicates that they are all the result of choice. The question is, therefore, not as between choice or no choice, but as between unconscious and deliberate choice. Here, it seems to us, a sharp line of distinction could hardly be drawn; and inasmuch as the chance of deliberate choice, as already stated, is generally slight and apparently without demonstrable advantage, any error that might result from this source, too, would seem to be but inconsiderable.

As to the point of the first word aroused by association being more or less casual and not always to be regarded as the best indication of the subject's knowledge, it must be observed that the only other alternative, namely, that of securing the subject's best choice, would be practically impossible of realization: one is at his best mentally probably during but small fractions of his life time. We could, of course, call for the response that might at the time of the test be chosen by the subject as the most appropriate one; but this, it seems to us, would but increase the scope of interference of the uncontrolled variable factor of conscious choice, without at the same time making sure of evoking a response which would be the best indication of the subject's knowledge.

We have considered the advisability of recording the reaction time or of setting a limit of time for reaction with the aid of a metronome, but have decided against it mainly on the grounds of our psychiatric experience; and it will be recalled here that we undertook this work in response to a need which we have come to feel in our psychiatric practice. In formulating the conditions of the test we aimed to secure for the subject the greatest possible freedom from affective tension, such as might be produced by placing any emphasis whatever on reaction time. Such tension, we believe, would probably affect the results in cases of neuropathic subjects, if not in many normal ones as well. The readiness with which such tension develops varies so widely in different individuals that it would seem very doubtful if a gain, rather than a loss, in uniformity of conditions would result from the introduction of a factor of technique which might tend to excite it.

Turning again to the question of selection of stimulus words, we submit in Table 10, in connection with each of the stimulus words on our list, the sum of the high standard values of the responses given, respectively, by five groups of normal subjects (25 in each group) which can be readily distinguished from one another according to degree of physiological maturation, amount of education, or mental capacity.

Assuming that the showing should be uninterruptedly progressive in the order of the arrangement of the groups of subjects in the table, it will be noted that the actual showing is not equally consistent with expectation for all the stimulus words.

The stimulus words may, in this respect, be divided into three classes: Class A, for which the showing is entirely consistent with expectation; Class B, for which it is consistent in relation to but four of the five groups of subjects represented in the table; and Class C, for which it is consistent in relation to but two or three groups of subjects.

According to this grouping the stimulus words arrange themselves as follows:

CLASS A (41 words): *Waterloo, arithmetic, isomerism, Portugal, burette, coagulation, Cervantes, metabolism, inquisition, amphibious, osmosis, titration, duodenum, biology, Odyssey, vertebrate, gravimetric, morphology, Magellan, protozoon, syntax, binomial, crustacean, ventral, dorsal, colloid, synthesis, Athens, perennial, catalytic, spectrum, continent, spore, haemoglobin, protoplasm, molecule, cotyledon, galvanic, polarization, cephalic, kinetic.*

CLASS B (28 words): *botany, declension, hyperbole, retina, franchise, decimal, percentage, cerebellum, carbohydrate, hypothecate, hexameter, distillation, chlorophyll, tetrahedron, Madagascar, corolla, Belgium, tangent, epithelium, feudalism, embryo, Renaissance, isosceles, cohesion, centrifugal, abscissa, gravitation, calyx.*

CLASS C (31 words): *geography, participle, refraction, amoeba, physics, subtraction, predicate, mollusc, hydraulic, fractions, cosecant, federal, meteor, momentum, Cornwallis, pollen, peninsula.*

TABLE 10.

	5th elem. school year.	1st high school year.	1st college year.	Subjects holding Master's degree.	"Starred Men."
geography	96	191	148	99	149
participle	0	293	305	263	412
Waterloo	6	427	728	772	918
refraction	1	46	436	331	436
arithmetic	20	78	124	193	201
botany	0	182	260	237	288
isomerism	0	0	29	39	238
Portugal	160	252	583	597	665
amoeba	12	0	72	106	102
declension	0	177	447	331	454
burette	21	6	123	141	198
physics	0	91	350	250	317
hyperbole	0	7	150	169	150
retina	0	160	1521	1520	1564
coagulation	0	0	408	617	696
Cervantes	1	7	187	298	710
franchise	6	6	182	119	235
subtraction	49	170	595	550	538
metabolism	1	0	12	82	126
predicate	119	382	570	414	409
mollusc	8	0	68	208	203
inquisition	2	75	255	405	450
amphibious	3	3	140	272	399
decimal	101	337	489	373	564
hydraulic	0	98	506	458	392
osmosis	0	0	38	99	110
percentage	21	96	117	179	121
cerebellum	0	195	1008	1067	1067
fractions	117	160	277	139	261
titration	1	0	75	114	184
carbohydrate	0	23	185	144	227
duodenum	0	2	6	496	766
cosecant	0	0	411	382	210
biology	2	95	128	209	228
Odyssey	6	77	623	715	892
vertebrate	0	50	122	285	389
gravimetric	0	19	69	73	126
federal	0	118	443	230	314
morphology	1	20	32	245	489
hypotenuse	0	195	908	1125	1033
Magellan	13	195	233	532	829
hexameter	2	20	114	96	220
meteor	3	82	330	339	306
momentum	0	9	234	203	186
Cornwallis	12	227	226	145	217
protozoon	14	0	103	230	255
syntax	8	198	754	817	860
distillation	0	81	282	318	156
pollen	109	108	471	392	423
peninsula	202	303	363	268	272
binomial	4	36	545	830	845

TABLE 10—Continued.

	5th elem. school year.	1st high school year.	1st college year.	Subjects holding Master's degree	"Starred Men."
crustacean	5	8	105	151	197
Bonaparte	0	354	733	600	559
meridian	41	122	133	134	117
chlorophyll	25	34	209	442	371
tetrahedron	0	7	105	164	106
Madagascar	235	473	560	596	549
corolla	0	254	209	304	376
ventral	3	2	145	220	479
Belgium	72	199	228	289	217
tangent	0	10	201	287	275
dorsal	0	0	252	393	438
colloid	1	2	14	44	95
equator	120	101	176	154	147
judiciary	2	186	320	334	128
synthesis	0	10	128	498	604
Athens	6	469	965	1235	1345
epithelium	1	3	51	750	514
feudalism	0	17	49	72	67
coefficient	0	107	146	124	93
perennial	1	50	153	181	246
plebeian	1	0	299	263	247
catalytic	0	1	55	57	147
embryo	0	4	42	125	103
spectrum	0	0	164	237	309
continent	87	180	240	241	331
spore	0	18	59	79	149
theorem	1	25	451	274	224
Himalaya	192	607	599	710	596
Renaissance	0	3	69	94	78
quotient	12	132	257	124	230
oxidation	0	101	238	200	193
haemoglobin	0	1	507	1265	1734
axiom	0	12	356	273	223
Amazon	918	1242	616	824	899
isosceles	0	891	1716	1503	1760
cohesion	0	12	234	217	275
protoplasm	3	41	84	126	127
centrifugal	0	33	462	565	531
molecule	1	98	398	500	683
cotyledon	5	51	109	203	318
abscissa	0	4	151	124	413
gravitation	0	97	163	213	170
galvanic	0	0	123	264	444
logarithm	0	0	268	231	225
calyx	1	492	513	646	564
polarization	9	6	143	533	698
cephalic	0	0	71	354	507
proteid	0	43	470	321	294
kinetic	0	0	353	517	624

sula, Bonaparte, meridian, equator, judiciary, coefficient, plebeian, theorem, Himalaya, quotient, oxidation, axiom, Amazon, logarithm, proteid.

The figures of Table 10 are presented in summary form, for the three classes of stimulus words here distinguished, in Table 11, wherein each number represents the average sum of high standard values of the responses given by each group of subjects to the stimulus words in the given class.

TABLE II.

Stimulus words.	5th elem. school year.	1st high school year.	1st college year.	Subjects holding Master's degree.	"Starred Men."
Class A (41 words)	15.36	99.08	375.40	606.36	801.96
Class B (28 words)	18.56	160.48	425.00	482.76	497.92
Class C (31 words)	80.60	212.40	434.68	373.72	372.88
Totals	114.52	471.96	1235.08	1462.84	1672.76

It is to be noted that while, as shown in Table 10, none of the words in Class B elicited a showing entirely consistent with expectation, the showing of the class as a whole, as given in Table 11, is consistent.

It would seem from all this that, while the test is sound in principle, it is capable of considerable improvement through a better selection of stimulus words. The improved selection is to be made only by an empirical method, like that which enabled us to select from amongst our list of one hundred stimulus words those of Class A. In other words, it would be necessary to make a preliminary selection of, say, two hundred additional stimulus words; to apply the test by means of these words to variously selected groups of subjects in order to construct frequency tables and norms representing certain degrees of education, mental capacity, etc.; and finally, to eliminate, with the aid of material thus collected, all words like those of Class C and perhaps even like those of Class B, so that one hundred stimulus words would

remain eventually which would correspond as far as possible with our Class A.

The test could probably be further improved if it were practicable to make a stricter selection of subjects whose test records should go to make up the "high standard" represented in the frequency tables. It would be desirable to select not only "starred men" exclusively, but, from amongst them, those whose test records make a showing above the average for their class. This would involve the application of the test by means of, say, 250 provisionally selected stimulus words, as suggested above, to at least 200 "starred men."

Upon being thus improved, the test could still not be applied to individual cases without certain precautions.

Above all it should be borne in mind that the test is not applicable to subjects showing unusual associational mechanisms, especially if characterized by an undue tendency to give individual reactions. Among such subjects are to be found some who are beyond question of very great mental capacity.

One such subject, a "starred man," occupying a chair in an important department of one of our leading universities, a man of international standing in science, devoted forty minutes to a conscientious but painful and futile attempt to cooperate in the test and gave it up as hopeless at the end of that time.

Another subject, equally eminent, writes in a personal communication: "My own difficulty is this.—When a word is dropped into me, as stimulus, it is likely first of all to arouse a gross conscious-attitude; then, out of that, there emerge (variously under various circumstances) images, feels, particularized attitudes, word-ideas. The word-ideas (1) are often irrelevant to the direct meaning of the stimulus,—they derive meditately from the attitude; (2) are often incomplete, mere hints of a word; and (3) often carry the meaning not of a single word but rather of a phrase or group of words. I think I may say that the direct word-to-word association is almost unknown to me,—unless I am working under a very pressing instruction as to time; then perhaps I should get individual verbal ideas.—Your instruction, now, calls for the 'first word.' The only way I could meet

it would be, I think, by a course of practice during which it (the instruction) was repeated again and again, until I got "mechanised" as a word-associator. That process seems possible; though I am not sure—one cannot be beforehand—that the utterance of the word would ever really represent my immediate response to the stimulus word."

In other cases subjects, apparently cooperating without difficulty, respond very largely with individual reactions. A striking instance is represented by the following test record. It is perhaps significant that no fewer than eight reactions are "doubtful" and that of the forty-nine individual reactions as many as eleven fall into the class of those possessing "value assigned by appendix" (see Part I), namely, *metabolism*—inhibition, *meteor*—surprise, *momentum*—forward, *Bonaparte*—leader, *synthesis*—fusion, *plebeian*—despicable, *embryo*—hormone, *axiom*—reason, *cohesion*—aggregation, *centrifugal*—approach, and *molecule* analysis.

Male, age 38, "starred man," has made important contributions to science, eminent both as teacher and as investigator, has been elected to offices and has received appointments indicating general recognition in competent circles of his scientific attainments.

This test record has an apparent total high standard value of 456. As it has served, with our other "starred men's" records, for the construction of the "high standard" on which the scoring of its reactions is based, a correction is required. The corrected total high standard value is 360, calculated according to the formula already given (Part III):

$$456 - 100 + \frac{456 - 100}{99} = 360.$$

geography.....	6	book	binomial.....	1	accuracy
participle.....	17	grammar	crustacean.....	1	development
Waterloo.....	46	Napoleon	Bonaparte.....	1	leader
refraction.....	35	light	meridian.....	1	artificial
arithmetic.....	1	books	chlorophyll.....	1	composition
botany.....	1	sensibility	tetrahedron.....	5	form
isomerism.....	28	chemistry	Madagascar.....	1	travel
Portugal.....	1	war	corolla.....	1	morphology
amoeba.....	1	light	ventral.....	1	picture
declension.....	29	noun	Belgium.....	1	university
burette.....	2	fluid	tangent.....	1	relation
physics.....	1	refraction	dorsal.....	1	opposite
hyperbole.....	10	curve	colloid.....	1	teleology
retina.....	1	cell	equator.....	1	central
coagulation.....	48	blood	judiciary.....	1	crime
Cervantes.....	1	novel	synthesis.....	1	fusion
franchise.....	1	right	Athens.....	1	war
subtraction.....	1	process	epithelium.....	1	protection
metabolism.....	1	inhibition	feudalism.....	1	armament
predicate.....	25	verb	coefficient.....	1	index
molluse.....	11	shell	perennial.....	2	year

inquisition.....	1	century.....	1	despicable.....
amphibious.....	2	batrachian.....	1	psychology.....
decimal.....	38	fraction.....	1	hormone.....
hydraulic.....	13	press.....	1	divisions.....
osmosis.....	2	water.....	1	science.....
percentage.....	2	mathematics.....	1	individual.....
cerebellum.....	1	irritability.....	3	problem.....
fractions.....	13	decimals.....	1	space.....
titration.....	1	accuracy.....	1	genetic.....
carbohydrate.....	2	nutrition.....	1	outcome.....
duodenum.....	1	rhythm.....	1	progress.....
cosecant.....	3	angle.....	1	corpuscle.....
biology.....	12	science.....	1	reason.....
Odyssey.....	11	Greek.....	1	parrot.....
vertebrate.....	1	classification.....	1	generalization.....
gravimetric.....	1	psychometric.....	1	aggregation.....
federal.....	1	laws.....	1	analysis.....
morphology.....	1	fashion.....	1	approach.....
hypotenuse.....	1	visual.....	1	analysis.....
Magellan.....	2	geography.....	1	part.....
hexameter.....	1	measure.....	1	description.....
meteor.....	1	surprise.....	1	molecular.....
momentum.....	1	forward.....	1	laboratory.....
Cornwallis.....	1	peace.....	1	Chauvenet.....
protozoon.....	8	zoology.....	5	botany.....
syntax.....	1	science.....	1	apparatus.....
distillation.....	1	research.....	1	neurology.....
pollen.....	4	fertilization.....	1	bio-chemistry.....
peninsula.....	1	description.....	1	activity.....

In a given case the question of the presence of unusual associational tendencies, such as are here referred to, and others as well, can be determined by the application of the Kent-Rosanoff test, as we have done in selecting our pathological material.

The possibility of a poor showing attributable to a temporary condition of the subject (see Part II) must also always be considered. A safer judgment in a given case could perhaps be arrived at by giving the test two or three times at intervals of, say, three months, and using the test record with the best showing.

A small portion of the material in our possession suggests that a good showing in the test is not necessarily an indication of a mental constitution which would insure in the given case a career of productiveness and achievement even in spheres of purely scholastic or scientific activity. It would seem to indicate merely the possession of certain elements of mental constitution which bear a highly important relationship to such achievement.

We are led to say, then, that in the individual case the test, even in the most improved form conceived by us and in spite of the above suggested precautions, will not furnish an absolutely conclusive result. We offer it merely as a material aid, to be used in connection with other methods of investigation, in measuring

mental capacity. Just as, for instance, no physician undertaking the investigation of a case of syphilis could reasonably limit himself to the application of the Wassermann reaction, so no one undertaking the investigation of the mental constitution of a human subject could reasonably limit himself to the application of this or any other single test.

PART VI. SUMMARY.

1. Our special problem was to develop a free association test, to be applied by means of a specially selected list of stimulus words, whereby a subject's mental capacity might be estimated from a measure of what he has acquired in the course of his education in comparison with the average acquisition of a group of subjects of the same amount of education.
2. In selecting the stimulus words we were guided mainly by the standard curricula of American schools.
3. Test records from one thousand subjects of at least full collegiate education served for the construction of frequency tables; among these were one hundred specially qualified subjects, listed in Cattell's "American Men of Science," more than half of them "starred man," whose test records served for the development of a "high standard," rendering possible a more accurate evaluation of reactions.
4. In scoring test records we have found the following measurements to be apparently of most significance: a. Sum of "high standard" values; b. Number of common reactions; c. Individuality index, i.e., a measure of the tendency to respond with individual reactions; and d. Failure index, i.e., a measure of the tendency to fail to respond.
5. Three hundred test records were secured from pupils in the elementary schools, high schools, and colleges in New York City, which served for the construction of a scale of norms.
6. One hundred test records were secured from adults of various degrees of education below college for comparison with those obtained from younger subjects for the purpose of gaining some idea of the influence of the factor of physiological maturation.
7. As far as this test is concerned, the results are influenced by the factor of education up to, but not beyond, the first year in college.

8. Native mental capacity influences the results very markedly, as is shown by the wide variations in groups approximately homogenous in respect to education.

9. The factor of physiological maturation can be shown to have an influence up to the age of eleven years, but not beyond.

10. The influence of another factor can be demonstrated, which may be termed *temporary condition of the subject*.

11. All conditions being approximately equal, no difference is found in the showings of the two sexes as regards our most significant measure,—the sum of "high standard" values; but male subjects show very consistently a tendency to give either individual reactions or common reactions having no "high standard" value where female subjects furnish failures of reaction instead.

12. Variously selected groups of subjects show, independently of education, striking contrasts in the results of this test. Especially interesting in this connection is the fact that subjects listed in Cattell's "American Men of Science," but not "starred," make a showing superior to those who have gained a Doctor's degree but who are not listed; while "starred men" make a showing superior to those not "starred."

13. Our pathological material consists of 205 selected cases of dementia praecox, manic-depressive psychoses, paranoic conditions, and epilepsy. The subjects were classified into two groups: those who had had not more, and those who had had more, than an elementary school education.

14. As far as the elementary education group is concerned, the existence of one of these neuropathic conditions (free, by selection, from mental deterioration or unusual associational mechanisms), with the possible exception of epilepsy, does not affect unfavorably the showing in the test as regards sum of "high standard" values; but a tendency to give individual reactions or common reactions without "high standard" value, where normal subjects give failures of reaction, seems to characterize all the groups of neuropathic subjects independently of sex.—It would seem that there is in normal subjects, independently of sex, an inhibiting mechanism which is lacking in neuropathic subjects

and which is distinct from the somewhat similar inhibiting mechanism existing in the female and lacking in the male sex.

15. As far as the higher than elementary education group is concerned, the showing of neuropathic subjects falls very distinctly below that of normal subjects.

16. Of the four neuropathic groups considered the showing most closely approaching that of normal subjects is that of the manic-depressive group; and this is followed by the remaining groups in this order: dementia praecox, paranoic conditions, and epilepsy.

17. In Part V. an attempt is made to evaluate the method in the light of the results. Certain criticisms and suggestions which have been made are discussed. It appears that only 41 of the 100 stimulus words on our list are well suited for our purpose; 28 others are less well suited, yet give a result on the whole fairly consistent with expectation; the remaining 31 are ill suited.—The test is capable of improvement through a better selection of stimulus words by an empirical method which readily suggests itself.

18. The test could probably be further improved by a stricter selection of subjects whose test records should go to make up the "high standard" in the frequency tables. Should a re-standardisation be attempted it would be desirable to select for his purpose only "starred men" to begin with and then, from amongst them, those whose showing in the test is above the average for their class.

19. This test is not applicable to subjects showing unusual associational mechanisms. In a given case the question of the presence of such mechanisms can be decided by the application of the Kent-Rosanoff test.

20. In a given case, in order to eliminate the possible disturbing influence of the factor which we have termed *temporary condition of the subject*, it might be well to apply the test two or three times at intervals of about three months and use the test record with the best showing.

21. A good showing in the test does not necessarily indicate a mental constitution which would insure in the given case a

career of productiveness and achievement, but only the possession of certain elements of mental constitution which bear a highly important relationship to such a career.

22. Accordingly, the test is offered not as capable of furnishing a conclusive result in a given case but only as a material aid, to be used in connection with other means of investigation, in measuring mental capacity.

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